

STERIS™



Maintenance Manual

MAINTENANCE MANUAL

**Amsco® 3085 SP™ Surgical Table
and**

Amsco® 3085 SP™ HERMES-Ready™ Surgical Table

**(06/15/01)
Rev. 1**

P-764328-948

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A WORD FROM STERIS CORPORATION

This manual contains important information on proper use and maintenance of the Amsco® 3085 SPT™ Surgical Table. **All personnel involved in the use and maintenance of this equipment must carefully review and comply with the warnings, cautions and instructions contained in this manual.** These instructions are important to protect the health and safety of personnel operating a 3085 SP table and should be retained in a conveniently accessible area for quick reference.

Complete instructions for uncrating have been furnished. If missing, contact STERIS for a replacement copy, giving the serial number and model numbers of the unit.

STERIS carries a complete line of accessories for use with this table. A STERIS representative will gladly review these with you.

Indications for Use

The Amsco 3085 SP Surgical Table is a mobile, electrohydraulically operated general surgical table that provides flexible articulation of the surgical patient.

Service Information

A thorough preventive maintenance program is essential to safe and proper unit operation. This manual contains maintenance schedules and procedures which should be followed for satisfactory equipment performance.

You are encouraged to contact STERIS concerning our comprehensive Annual Maintenance Agreement. Under the terms of this agreement, preventive maintenance, adjustments, and replacement of worn parts are done on a scheduled basis to assure equipment performance at peak capability and to help avoid untimely or costly interruptions. STERIS maintains a global staff of well equipped, factory-trained technicians to provide this service, as well as expert repair services. Please contact your STERIS representative for details.

NOTE: Patient grounding post/potential equalization terminal is provided. The mating female connector is not furnished by STERIS.

Advisory

A listing of the safety precautions to be observed when operating and servicing this equipment can be found in Section 1 of this manual. Do not operate or service the equipment until you have become familiar with this information.

Any alteration of this equipment not authorized or performed by STERIS Engineering Service which could affect its operation will void the warranty, could violate federal, state and local regulations and jeopardize your insurance coverage.



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Class 1 Equipment
Type B Equipment

Ordinary Equipment
(enclosed equipment without
protection of ingress of water).

Equipment not suitable for use
in the presence of a flammable
anesthetic mixture with air or
oxygen or nitrous oxide.

Suitable for continuous use.

Manufactured Exclusively by STERIS Corporation Montgomery, AL	ISO 9001 EN 46001 ISO 13485 Certified
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ENGLISH. Any translations must be made
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NOTE: Refer to Section 14, Illustrated Parts Breakdown, for listing of exploded views.

LISTING OF WARNINGS AND CAUTIONS









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The following is a listing of the safety precautions which must be observed when operating and servicing this equipment. WARNINGS indicate the potential for danger to personnel, and CAUTIONS indicate the potential for damage to equipment. These precautions are repeated (in whole or in part), where applicable, throughout the manual.




WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:

-  Safe and reliable operation of this equipment requires regularly scheduled preventive maintenance, in addition to the faithful performance of routine maintenance. Contact STERIS Engineering Service to schedule preventive maintenance.
-  Repairs and adjustments to this equipment must be made only by fully qualified service personnel. Non-routine maintenance performed by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS Engineering Service regarding service options.

WARNING – PERSONAL INJURY HAZARD:


-  Health care professionals must ensure that patients are positioned and monitored so as to prevent compromising respiration, nerve pathways, or circulation.
-  When installing any table accessory, check for correct attachment and tighten securely (if appropriate). Do not use worn or damaged accessory. Check installation before using any accessory.
-  Do not exceed weight limit that may be specified on accessory or 500 lbs (226 kg), whichever is lower.
-  Unanticipated table movement could cause patient injury. Patient must be secured to the table in accordance with recommended positioning practices.
-  Do not immerse any part of foot control in liquids; this could cause unanticipated table movement, leading to patient injury. Always cover control with a plastic bag before using.
-  Breaking hydraulic fittings will cause associated table section to fall and excessive amounts of fluid may flow from the fitting.
-  The lock mechanism has a high spring force and can cause severe pinching. Keep fingers, etc. away from under the plunger and blocking.
-  If the integrity of the external protective earth conductor installation or arrangement is in doubt, operate the table from its internal power source.

WARNING – INSTABILITY HAZARD:


-  Stabilize table when transferring patient.
-  Possible patient or user injury, as well as table or accessory failure, may result from using STERIS table accessories for other than their stated purpose – or from using, on STERIS tables, accessories manufactured and sold by other companies.
-  Patient Transfer Board must be used as a leg support only. It is not intended to support upper body weight of a patient.

Continued ...












WARNING – PINCHING HAZARD:

-  Pinch points are created during extreme tabletop articulation. Carefully review illustrations in Figure 2-1 before operating the table.
-


WARNING – PINCHING AND TIPPING HAZARD:

-  Patient injury may result if the operator of this table is not completely familiar with the controls for patient positioning and table operation.
-


WARNING – TIPPING HAZARD:

-  Do not place patient on the table unless floor locks are engaged.
 -  Do not release floor locks while patient is on table.
 -  Do not use this table for patients exceeding the 500-lb (226 kg) limit. The maximum safe patient weight on this table for the standard surgical positions is 500 lbs (226 kg) with floor locks engaged.
 -  When performing surgery requiring a headrest accessory in reversed patient orientation, or when using a Fem/Pop board or the 3080/3085 Ortho Extension accessory, do not exceed 400 lbs (181 kg) patient weight.
 -  Do not use the Fem/Pop Board with X-ray Tops for obese patients.
 -  Foot Extension Accessory or combination of Foot Extension and Headrest Accessories from previous design Amsco tables must not be used for reverse orientation on the 3085 SP Table.
 -  Do not use two or more Uro-Endo/Image Amplification Extension accessories together on the 3085 SP Table.
 -  Do not articulate table with auxiliary override systems unless floor locks are engaged.
 -  During an articulation if the table top sections contact an obstruction, the table may tip. Before lowering either the table top or individual sections, remove possible obstructions. Do not allow leg section, when lowered, to contact the floor.
 -  Fem/Pop Board must be installed into leg section only. Board must be used to support the legs only. It is not intended to support upper body weight.
 -  Do not use the Fem/Pop Board with patients exceeding 400 lbs (181 kg)
-


WARNING – TRIPPING HAZARD:

-  Route the power cord to the receptacle in a position so that it will not be tripped over by personnel in the area.
-


WARNING – EXPLOSION HAZARD:

-  Table must not be used in the presence of flammable anesthetics.
-

WARNING – ELECTRIC SHOCK HAZARD:


-  Before replacing PC boards or power supply assembly, disconnect all power sources: i.e., wall plug, control battery, and (if a battery-operated table) the motor battery positive terminal.
-

WARNING – INFECTION HAZARD:

















-  To protect against aerosols being reflected from contaminated surfaces, wear rubber or plastic gloves, masks and eye protection and follow OSHA blood-borne pathogens standards when cleaning.

Continued ...

WARNING – DISPOSAL HAZARD:












-  This product contains materials which may require disposal through appropriately licensed and permitted hazardous waste management firms.
-

CAUTION – POSSIBLE EQUIPMENT DAMAGE:

-  When moving the table to point of use, roll it carefully at moderate speed and only over smooth floors. Maximum floor clearance is 1/4" (6 mm). Avoid door jambs, elevator jambs and obstructions greater than 1/4" (6 mm). If necessary, lift uncrated table over obstructions, onto trucks, etc. Lift table evenly and only by the table base. DO NOT transport articles (including accessories) on top of the table and DO NOT use a forklift to move the uncrated table.
-  Route the hand control cord (and optional HERMES-Ready interface cord and/or optional foot control cord, if applicable) clear of any pinch points where the cord(s) could be damaged.
-  The use of incorrect hydraulic oil may severely damage the table and/or cause malfunction. Contact your STERIS Service Representative for the proper oil to use.
-  For HERMES-Ready tables, use the HERMES-Ready 3085 SP hand control with the blue strain relief on the plug. The standard 3085 SP hand control with a red strain relief on the plug will not connect to the HERMES-Ready table.
-  Hang the hand control from side rail (or end rail) of the table when not in use, to avoid possible damage to the control.
-  During some extreme articulations, the tabletop may contact the base and/or column shrouds. Take care to avoid positioning the table in such a way as to cause damage to the shrouds.
-  Use caution when raising the seat section or back section while the kidney bridge is elevated. The section may contact the elevated kidney bridge and damage the bridge and/or section.
-  When cleaning/disinfecting table, do not use phenolics, which may cause patient skin burns if inadequately rinsed off, or alcohol, which does not have sufficient cleaning/disinfection properties.
-  When cleaning/disinfecting table, thoroughly read the cleaning fluid directions for use and follow all directions and cautions as shown.
-  Do not spray cleaning fluid into electric receptacles and avoid spraying directly on override switches or into clearance space above column. Spray or drippage may settle onto electric circuits inside table causing corrosion and loss of function.
-  Cleaning procedures requiring articulation of the table should be performed only by persons familiar with table operation.
-  After performing cleaning procedures, ensure pads and X-ray tops are completely dry before reinstalling. Moisture trapped between pads and X-ray tops may contribute to equipment damage, such as X-ray top warpage.
-  Table may cause dimpling of cushioned vinyl flooring or other soft flooring. When fully loaded, floor lock feet exert 380 psi (27 kg/cm²) pressure on the floor.
-  The table has internal switches for setting to various AC-input voltages. Improper setting of switches may damage table electrical system and/or cause improper operation of the table.
-  Static electricity can damage microprocessor controls. Indiscriminate probing of circuits or improper connections may result in immediate or delayed electrical failure. If the electronics are to be accessed, use a personal grounding device. Exercise care in all activities involving the electronic circuitry.
-  Always connect power cord to a properly grounded socket.



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



CAUTION - POSSIBLE EQUIPMENT DAMAGE (continued):

-  Isolate the coil and/or pump motor from the control by disconnecting the wires on the motor terminal board, or slip the wires off the solenoid coil.
-  To prevent rubber bumpers from being cut off, replace base shroud pieces carefully and evenly.
-  Before articulating or making any adjustments to the table, be certain that no electrical or hydraulic hoses are subjected to stress or pinching.
-  Tilt articulation must be activated while adjusting the cylinder rod to release the brake mechanism. Failure to do this will destroy the cylinder.
-  Do not remove back section cylinder without supporting back section. Limit switch will be damaged if back section drops too much.
-  When replacing solenoid valves, carefully remove retaining washer and pressure spring to prevent washer and spring from quickly expelling from the valve block.
-  Use care when unthreading solenoid valve housing from the valve manifold. Plunger is equipped with a spring which may expel from the housing when removed.
-  Failure to secure a tabletop section will result in sudden lowering of that section.
-  When re-installing the power supply assembly, be aware of the table-lock microswitch (blue twisted-pair wire numbers 80 and 81; see Figure 14-20B, #109) Handle carefully to avoid breaking solder connections.
-  Handle wire cables carefully, making sure they do not become hung up in other components, and that wires do not pull out of plugs.
-  Before field-resetting of voltage switches, disconnect table from any external AC power source.












Definition of Symbols

Following is a key to symbols which may be on your table or controls.

Symbol	Definition
	Protective Earth (Ground)
	Attention, Consult Manual for Further Instructions
A	Amperage Rating of the Unit
V	Voltage Rating of the Unit
~	Alternating Current
kW	Power Rating of the Unit
Hz	Frequency of the Unit

Symbol	Definition
	Equipotentiality
	Type B Equipment
	Powered by AC
	Powered by Battery
	Battery Charged
	Battery Down
	Optional HERMES-Ready System Installed
	ON
	OFF
	Floor Lock (Function Touch Pad)
	Floor Lock: Lock
	Floor Lock: Unlock
	Patient Orientation (Function Touch Pad)
	Normal Orientation
	Reverse Orientation
	Trendelenburg
	Reverse Trendelenburg

Continued ...

Symbol	Definition
	Height Up (Raise)
	Height Down (Lower)
	Tilt Left
	Tilt Right
	Back Up
	Back Down
	Leg Up
	Leg Down
	Flex
	Reflex
	Level

The product literature included in this section contains factual data relating to the principal characteristics of the Amsco® 3085 SPT™ Surgical Table.

The literature is informative rather than instructional. It provides and conveys, through text and illustrations, a general concept of the equipment, its purpose, limitations, and technical applications.

General Description

Amsco 3085 SP Surgical Tables are remote control, Image Amplification compatible units with auxiliary override (backup) systems for the control and hydraulic systems. Tables are furnished with 2" (50 mm) thick pads and are available in the following two configurations:

- Electric Powered
- Battery Powered

Both tables are operated in the same manner

*NOTE: Two hand controls are available: The standard hand control unit (with a **red** strain relief on the plug) is for standard tables; the HERMES-Ready hand control (with a **blue** strain relief on the plug) is for tables with the HERMES-Ready option.*

Technical Specifications

» Overall Size

24-13/32" wide x 75-15/16" long x 27 to 44" high
(620 mm wide x 1928 mm long x 686 to 1118 mm high)

» Image Amplification Coverage

Head End – 28" (711 mm) with headrest attached (plus 3" [76 mm] maximum extension of headrest).

Foot End – 33" (838 mm) without headrest attached.

– 45" (1143 mm) with headrest attached (no extension of headrest allowed when at this end).

Width – 14.5" (368 mm) average on both ends.

» Weight

737 lbs (334 kg): maximum anticipated floor load pressure exerted on floor: 380 psi (27 kg/cm²).

» Utility Requirements

Electric:*

- 100 V, 5 A, 1-Phase
- 120 V, 4.5 A, 1-Phase
- 220 V, 3 A, 1-Phase
- 230/240 V, 2.5 A, 1-Phase

* Each table is shipped from the factory configured to the electrical requirement specified on the factory order. If required to be changed in the field, consult STERIS for the procedure/materials required.

Components

1. Remote hand control with 2' (610 mm) coiled cord (15' [4572 mm] long when extended), provides following:
 - a. Single command return-to-level function (for RL/SP tables).
 - b. Hand control plugs into color-coded receptacle.
 - c. Has Power ON/OFF touch pads with an indicator LED.
 - d. Power mode/condition indicator LEDs (AC line, battery and low battery).
 - e. Floor lock function and actuate touch pads with LED indicators.
 - f. Patient orientation touch pads for preprogramming of normal or reverse orientation.
 - g. Position function and actuate touch pads for Trendelenburg, Reverse Trendelenburg, height, side tilt, back, leg and simultaneous flex/reflex.
2. Table Base is cast iron with textured enamel finish with following:
 - a. Top is enclosed by a two-section, welded stainless steel cover.
 - b. Four conductive swivel casters.
 - c. Three conductive self-compensating floor locks (tripod principle)
 - d. Line-power input plug with protective fuses.
 - e. Manual foot pedal (hydraulic backup).
 - f. Hydraulic pump/motor assembly, power control assembly and control batteries are located within the base.
 - g. Motor batteries and motor charger are located within base.
3. Table has a separate override control system which allows operation of basic table functions and floor lock/unlock function should the primary microprocessor system become inoperative.
4. Patient weight limitations are as follows: for surgeries requiring a headrest accessory in a reversed patient orientation, or when using a Fern/Pop board or the 3080/3085 Ortho Extension accessory, the table will accommodate patient weight up to 400 lbs (181 kg); for all other patient orientations, the table will accommodate up to 500 lbs (226 kg) patient weight.
5. Both table and X-ray tops have a perineal cut-out in the seat section.
6. The foot section lowers 105° giving a standing or seated surgeon perineal access.
7. Manual kidney elevator that will rise 4" (102 mm) from tabletop.
8. Table nominal articulations:
 - a. Height: rise 27" to 44" (686 to 1118 mm) nominal.
 - b. Lateral Tilt: 18° nominal from horizontal.
 - c. Trendelenburg: 25° nominal from horizontal.
 - d. Reverse Trendelenburg: 25° nominal from horizontal.
 - e. Back Section: up to 55° nominal or down 25° nominal from horizontal.
 - f. Leg Section: up 80° nominal or down 105° nominal from seat section.
 - g. Flex: back down 21° nominal with seat down 25° nominal from horizontal.
 - h. Reflex: back up 29° nominal with seat up 35° nominal from horizontal.

9. Tabletop:
 - a. 20" (508 mm) wide and 75-15/16" (1928 mm) long, divided into four hinged sections: headrest, back, seat and leg.
 - b. 2" (50 mm) pressure management pads.
 - c. All sections constructed of a radiolucent material.
 - d. A Velcro[®] (Velcro Corp.) tape strip on the longitudinal centerline of the tabletop section permitting instant application and removal of mattress pads, even when the pad is reversed.
10. Headrest Extension:
 - a. Headrest support bars are capable of extending the length of the table an additional 3" (76 mm).
 - b. The headrest can be articulated 90° up and 90° down in 15° increments.
11. Cassette may be positioned from either end of table or either side.
12. Table can be manually controlled in case of power failure.
13. Easy-glide swivel casters with automatic self-compensating floor locks.
14. Drain pan retracts fully so leg section can be raised without removing the tray and extend fully for cystoscopy procedures.
15. Foot control assembly for use in conjunction with the hand control (with following):
 - a. Splash-proof constructed of cast-aluminum with a stainless steel guard.
 - b. Has a 3' (914 mm) long coiled cord (14' [4267 mm] when extended) hospital grade cord and plug.
16. Head/Foot Extension - to provide additional patient support.
17. Headrest Adapter - this will allow use of standard Neuro, Eye and ENT attachments.
18. Radiographic tops complies with the Radiation Control for Health and Safety Act of 10-18-68.

Pinch Point Warnings

! WARNING - PINCHING HAZARD: Pinch points are created during extreme tabletop articulation. Carefully review illustrations in Figure 2-1, before operating the table.

During extreme tabletop articulation, various possible pinch points exist. These points are identified in Figure 2-1. All personnel involved in tabletop positioning should examine and be aware of these points before operating the table.

Patient Positioning

The Amsco 3085 SP Table is designed to safely support a 500-pound (226 kg) patient using standard surgical positions shown. See Figure 2-2 for general positioning guidelines.

! WARNING - TIPPING HAZARD: Do not place patient on the table unless floor locks are engaged.

! WARNING - TIPPING HAZARD: Do not release floor locks while patient is on table.

! WARNING - TIPPING HAZARD: Do not use this table for patients exceeding the 500-lb (226 kg) limit. The maximum safe patient weight on this table for the standard surgical positions is 500 lbs (226 kg) with floor locks engaged.

! WARNING - TIPPING HAZARD: When performing surgery requiring a headrest accessory in reversed patient orientation, or when using a Fem/Pop board or the 3080/3085 Ortho Extension accessory, do not exceed 400 lbs (181 kg) patient weight.

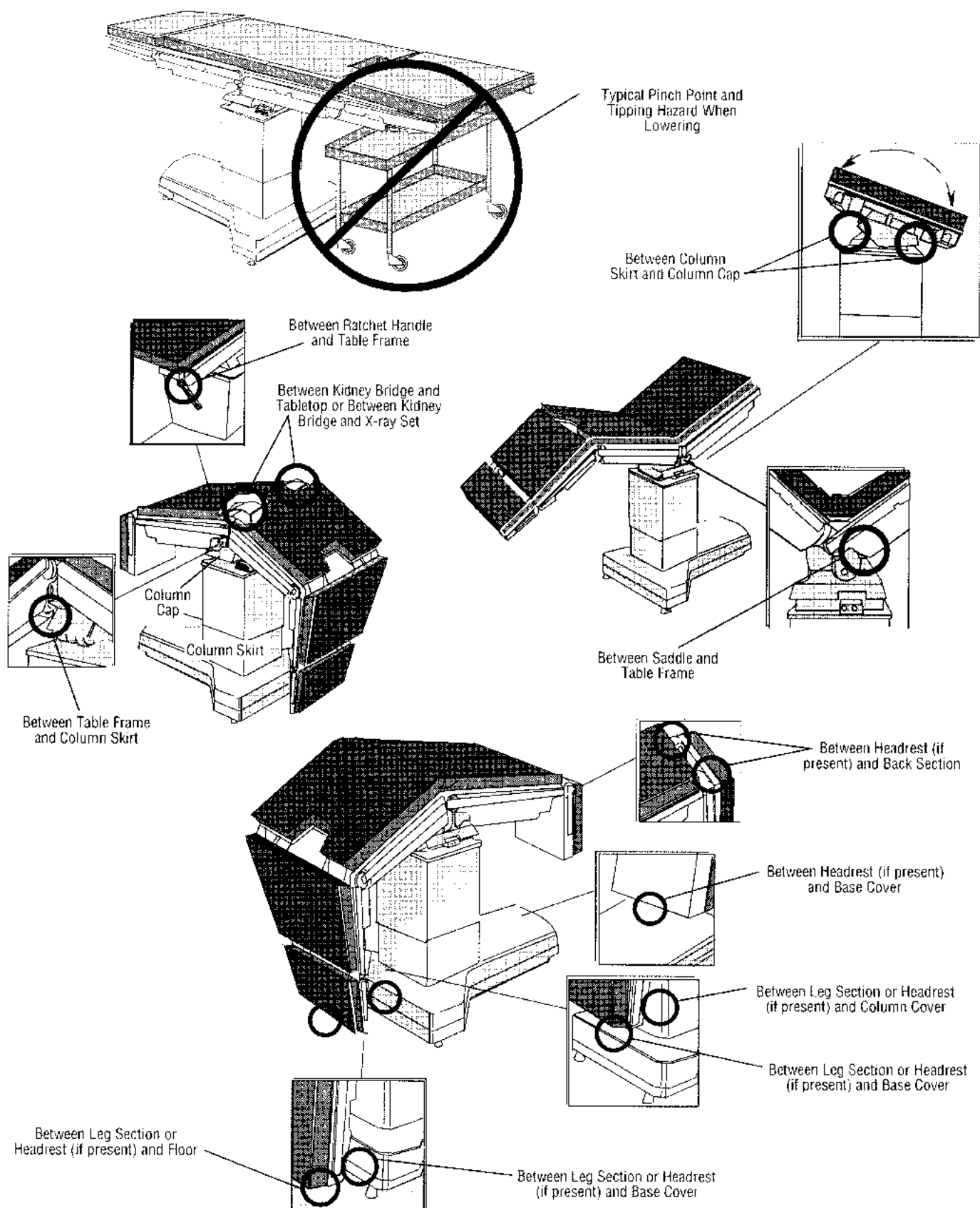


Figure 2-1. Pinch Points

» **Prevent Possible Tipping**

Do not exceed 500 lbs (226 kg) maximum patient weight.

Do not place patient on the table unless floor locks are engaged.

Do not release floor locks while patient is on table.

Do not attempt to move table while patient is on it.

Do not extend (lengthen) the patient support surface beyond that shown (refer to Figure 2-2), unless using a STERIS table accessory intended for this purpose and the accessory weight limitation is not exceeded.

When using Fem/Pop Board or the 3080/3085 Ortho Extension accessory, do not exceed 400 lbs (181 kg) maximum patient weight.

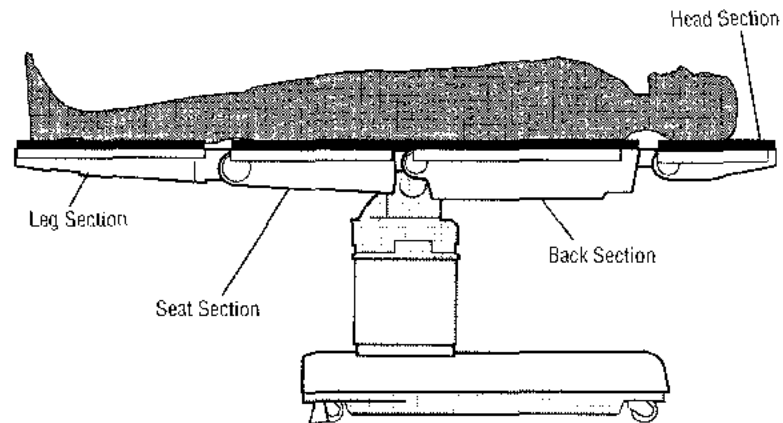


Figure 2-2A. Normal Patient Orientation

» **For Reverse Patient Orientation**

Always check patient stability when patient is positioned.

When performing surgery requiring a headrest accessory in a reversed patient orientation, do not exceed 400-lb (181 kg) patient weight limit.

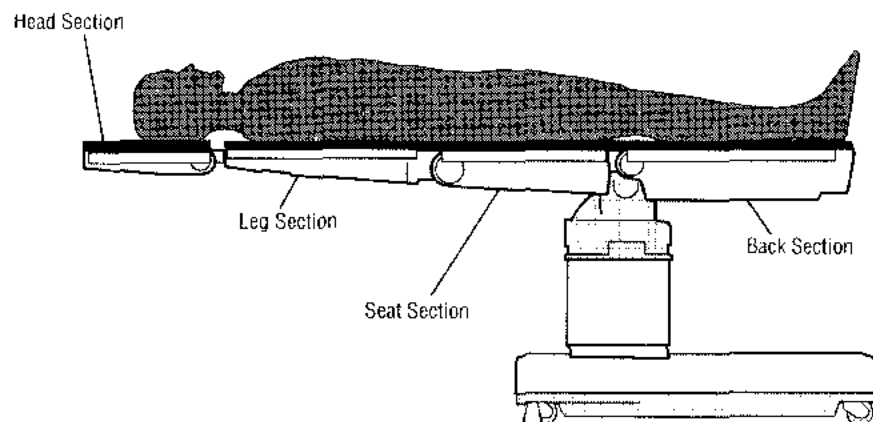


Figure 2-2B. Reverse Patient Orientation

» Other Considerations

Use extreme care when transferring patients to or from table.

Check that all accessories are properly installed and secured.

Check for and eliminate harmful patient pressure points once patient is positioned.

Have a qualified medical professional monitor patients during surgery for all possible patient positioning hazards.

Special Tools/ Materials Required for Maintenance

Table 2-1 shows the tools and kits necessary to repair and maintain the Amsco 3085 SP table. It is important that these tools be on hand before any maintenance procedures are started. Because of the special nature of the table's hydraulic system, keeping the hydraulic hoses and cylinders clean and dust-free is very important.

Table 2-1 Special Tools for Amsco 3085 SP Table Maintenance		
Part Number	Tool	Quantity
P-764322-952	Allen Wrench - Tamperproof Screws	1
P-764323-811	Protractor, Digital Smart Level	1
P-764324-651	Kit, Tool 3080 Bieri (B4)	1
P-150823-387	• Hose, Size 2-250 mm	1
P-764324-652	• #0202-4-4 Female Pipe Connector	1
P-764324-653	• #G6-PL-S Union #6 to #6	1
P-764324-654	• #BUZ 6-LS-S Plug	2
P-764324-655	• Hex Key Set L Metric	1
P-764324-656	• Socket, 1/2 DR, 24 mm, 12pt Deep	1
P-764324-657	• Wrech Comb. Met., 10 mm Thin, 70° Offset	1
P-764324-658	• Wrech Comb. Met., 13 mm Thin, 70° Offset	1
P-764324-659	• Wrech Comb. Met., 14 mm Thin, 70° Offset	1
P-764324-660	• Wrech Comb. Met., 17 mm Thin, 70° Offset	1
P-764324-661	• Wrech Comb. Met., 19 mm Thin, 70° Offset	1
P-764324-662	• GC6-PL 1/4" NPT-S	1
P-764325-933	Kit, Velcro Adhesive, 1 pt., with Instructions	1
P-755715-499	Stainless Steel Cleaner, Can	1
R-5300-545	Loctite 222, 50cc	1
R-5300-554	Loctite 242, 50cc	1
R-5300-548	Loctite 271, 10cc	1
R-5300-542	Loctite 609, 50cc	1
R-5300-540	Loctite 290, 50cc	1
R-5300-557	Loctite 495, 1 oz	1
P-764322-636	Kit, 3080, Oil, 1 gal	
P-764326-267	Chevron 680 Oil, 4 oz	1
P-764322-635	Neptune 7, 4 oz. Tube	1
R-5300-286	Ora Lub Anti-seize	1
R-6400-826	Lubriplate HD-2, 14 oz. Tube	1
R-6200-400	Lint-free Cloth (BAF), Package	1
P-764322-894	Carrying Case	1
P-764319-808	Gray Touch-up Paint (12 oz spray)	1
Q-150824-612	Gray Touch-up Paint (60cc bottle)	1
R-5300-563	Clear 108 RTV	1
R-5300-006	White 162 RTV	1

⚠ WARNING – PERSONAL INJURY HAZARD: If the integrity of the external protective earth conductor installation or arrangement is in doubt, operate the table from its internal power source.

⚠ WARNING – EXPLOSION HAZARD: Table must not be used in the presence of flammable anesthetics.

⚠ WARNING – TRIPPING HAZARD: Route power cord to receptacle in a position so that it will not be tripped over by personnel in the area.

⚠ CAUTION: When moving the table to point of use, roll it carefully at moderate speed and only over smooth floors. Maximum floor clearance is 1/4" (6 mm). Avoid door jams, elevator jams and obstructions greater than 1/4" (6 mm). If necessary, lift uncrated table over obstructions, onto trucks, etc. Lift table evenly and only by the table base. **DO NOT** transport articles (including accessories) on top of the table and **DO NOT** use a forklift to move the uncrated table.

⚠ CAUTION: The table has internal switches for setting to various AC input voltages. Improper setting of switches may damage table electrical system and/or cause improper operation of the table.

NOTE: Patient grounding post/potential equalization terminal (male connector, DIN 42801) is provided. Mating female connector is not furnished by STERIS.

IMPORTANT: Before connecting the table to your AC power system, check that table internal voltage switches are set for your power system (100, 120, 220, or 230/240).

IMPORTANT: Battery powered tables should be completely charged prior to initial operation. Charge batteries as indicated in Section 6, Routine Maintenance, before proceeding.

If table is to be placed in extended storage, have table prepared for storage by a qualified service technician. Make sure batteries are disconnected and check batteries before reconnecting. If table remains in extended storage for longer than 6 months, table must be operated through all articulations and the batteries charged every 6 months.

Install and Route Power Cord

WARNING—TRIPPING HAZARD: Route the power cord to the receptacle in a position so that it will not be tripped over by personnel in the area.

1. Place table at desired location.

NOTE: Omit the following steps 2 and 3 if table is battery-powered.

2. Connect female end of 20' (6-meter) long power cord to male connector located on the narrow end of table base (can only be connected one way). See Figure 3-1.

3. Route the power cord to the wall receptacle so that it will not be tripped over, then plug it into an appropriate receptacle.

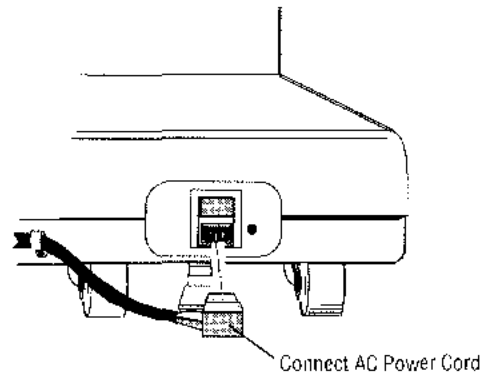


Figure 3-1. Power Cord Connection (Electric Table Only)

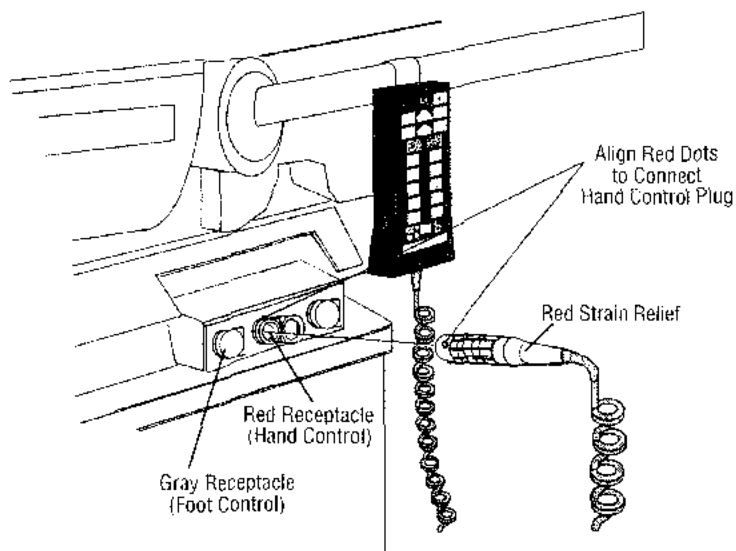
Install Hand Control and Lock Table in Place

1. Connect the hand control plug to the proper receptacle on the table.

NOTE: A spring-loaded lock ring locks plug into receptacle. When disconnecting the hand control, pull back on the lock ring before pulling the plug from the receptacle.

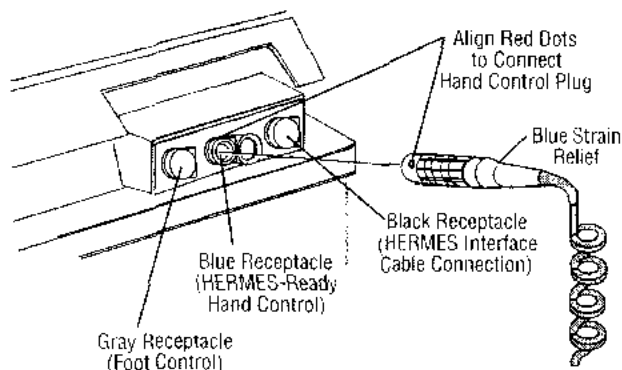
NOTE: The standard hand control and the HERMES-Ready hand control are not interchangeable.

- **Standard 3085 SP Tables:** Align the red dot on the red plug of the hand control cord with the red dot of the red receptacle on the table and push into connected position (see Figure 3-2A).



**Figure 3-2A. Hand Control Connection for
Standard 3085 Table**

- **HERMES-Ready 3085 SP Tables:** Align the red dot on the blue plug of the hand control cord with the red dot of the blue receptacle on the table, and push into connected position (see Figure 3-2B).



**Figure 3-2B. Hand Control Connection for
HERMES-Ready 3085 Table**

2. Press the "ON" button at the top of the hand control to turn the table on. All LEDs on the hand control may light momentarily for control system self-test when the power is turned on.

Refer to Figure 3-3 for identification of hand control functions. See Section 7, Troubleshooting, to identify any problems with the hand control.

NOTE: If the wrong function selection button is accidentally pressed, press the correct function button to override the incorrect selection.

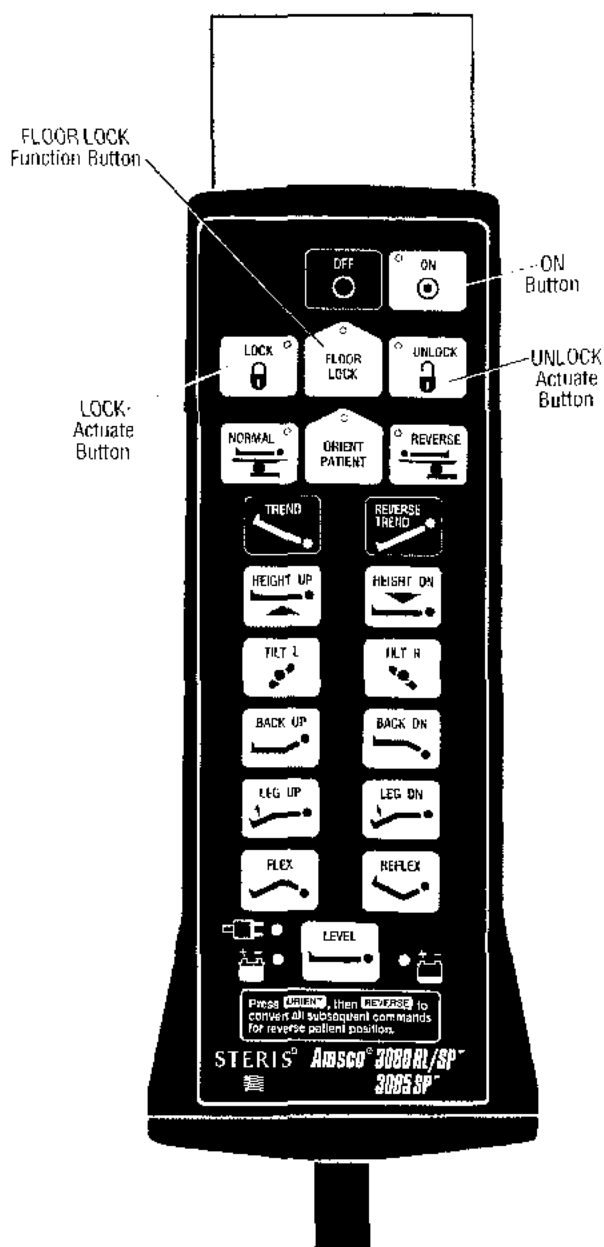


Figure 3-3. Hand Control

3. Press the FLOOR LOCK Function button in the center row of control buttons, and **within 5 seconds** press the LOCK button (to the left of the FLOOR LOCK button, see Figure 3-3). Table is locked in position as floor locks are lowered and casters are raised. The table will remain locked (immobile) until the UNLOCK* function is actuated.

NOTE: The tripodal floor locks are self-compensating for floor irregularities of up to 1/4" (6 mm), and should not require adjustment. Floor locks should engage simultaneously and the table base should rise evenly. Casters should swing freely when the table is in the "LOCKED" position.

4. Hang the hand control on the table side rail or end rail (see Figure 3-2) and route the control cord away from possible pinch points.

5. Check floor locks to make sure each is snug against floor (see Figure 3-4).

IMPORTANT: If table was in storage for longer than four weeks, operate table through all articulations prior to usage.

* To unlock table, press the FLOOR LOCK button in the center row of control buttons, and within 5 seconds press the UNLOCK button adjacent to it on the right (see Figure 3-3). Floor locks will retract and table will rest on casters.

- CAUTION:** Hang hand control from side rail (or end rail) of table when not in use to avoid possible damage to the control.

CAUTION: Route the hand control cord (and optional HERMES-Ready interface cord and/or optional foot control cord, if applicable) clear of any pinch points where the cord(s) could be damaged.

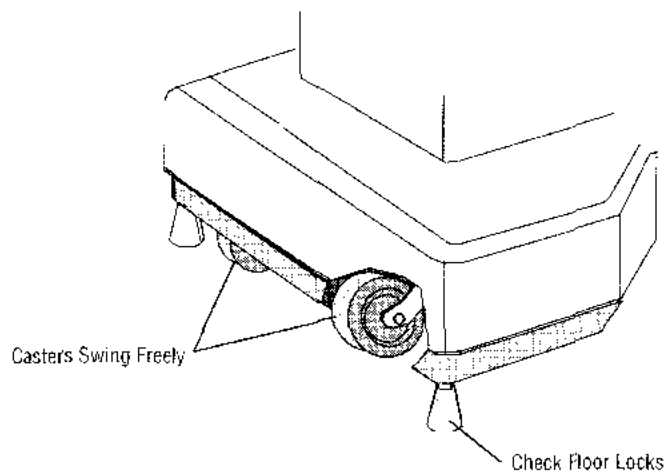


Figure 3-4. Check Floor Locks

Attach Headrest and Orient Patient

- ⚠ WARNING – EXPLOSION HAZARD:** Table must not be used in the presence of flammable anesthetics.
- ⚠ WARNING – TIPPING HAZARD:** Do not place patient on the table unless floor locks are engaged.
- ⚠ WARNING – TIPPING HAZARD:** Do not release floor locks while patient is on table.
- ⚠ WARNING – PERSONAL INJURY HAZARD:** If the integrity of the external protective earth conductor installation or arrangement is in doubt, operate the table from its internal power source.

For maximum patient positioning flexibility, the Amsco® 3085 SP™ table is designed so that the headrest can be attached to either end of the table.

IMPORTANT: Control must be oriented as to the patient's position on table before any positioning functions are operable. When the table is turned on with the hand control, it will automatically activate in NORMAL patient orientation. The user can then select REVERSE orientation if desired.

NOTE: Thumbscrews located under tabletop frame must be loosened before headrest can be attached or removed.

1. Determine desired patient position and attach headrest to the end of the table to obtain this desired position (see Figure 4-1).

Attach headrest as follows.

- a. Insert rods extending from each side of headrest attachment into the bores provided in either end of table frame.
- b. Reach under tabletop frame and fully tighten the two thumbscrews (one on each side of frame) to secure the headrest attachment in place. Refer to "Headrest Positioning," later in this section, for adjustment procedures.

2. Verify that power is ON and table floor locks are properly engaged.

NOTE: If the wrong function selection button is accidentally pressed, press the correct function button to override the incorrect selection.

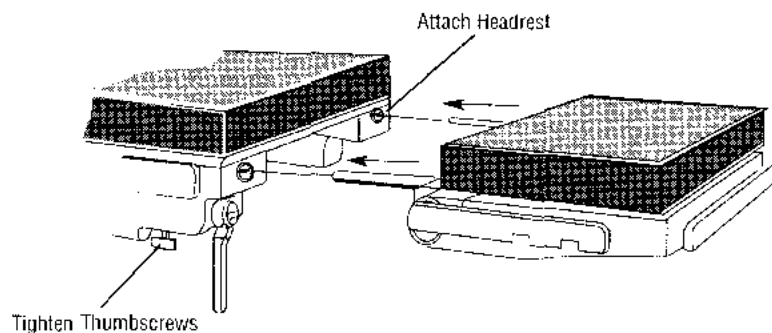


Figure 4-1. Attach Headrest

⚠ WARNING – TIPPING HAZARD: Do not use this table for patients exceeding the 500-lb (226 kg) limit. The maximum safe patient weight on this table for the standard surgical positions is 500 lbs (226 kg) with floor locks engaged.

⚠ WARNING – TIPPING HAZARD: When performing surgery requiring a headrest accessory in reversed patient orientation, or when using a Fem/Pop board or the 3080/3085 Ortho Extension accessory, do not exceed 400 lbs (181 kg) patient weight.

3. Press the ORIENT PATIENT Function button in the center row of buttons on the hand control and **within 5 seconds** (while the LED is still lit), press the appropriate Actuate button (NORMAL or REVERSE) to indicate the orientation of the patient's head on the table (see Figures 4-2 and 4-3).

NOTE: Activation of the ORIENT PATIENT function automatically translates all subsequent commands from the hand, foot, and optional HERMES controls, so that they correspond correctly to where the indicated patient's head is on the table. For example, when the REVERSE Actuate button is activated, the direction of the Trendelenburg and Side Tilt articulations is automatically reversed, and the Back and Leg articulations are likewise adjusted so that each part of the patient's anatomy is positioned correctly when the patient is reversed on the tabletop. The anesthesiologist does not have to think backwards to adjust for the reverse orientation of the patient.

If the control is turned OFF or power is lost while the "reverse" orientation is activated, when the table control is turned ON again, the control automatically reverts to "normal" orientation.

IMPORTANT: When "Reverse" patient orientation is selected, the Flex and Reflex articulation functions are disabled.

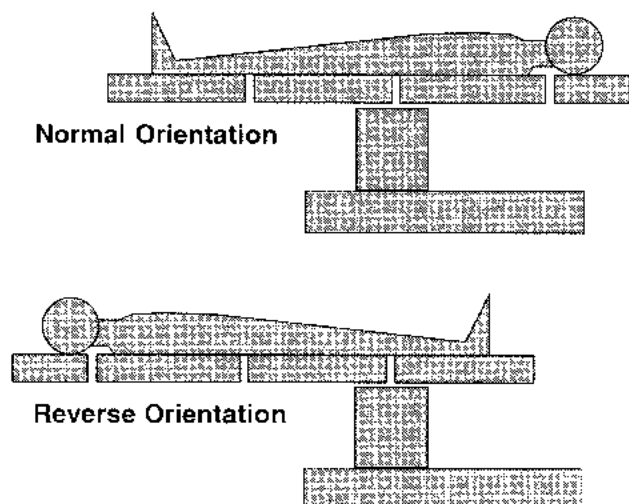


Figure 4-2. Patient Orientation

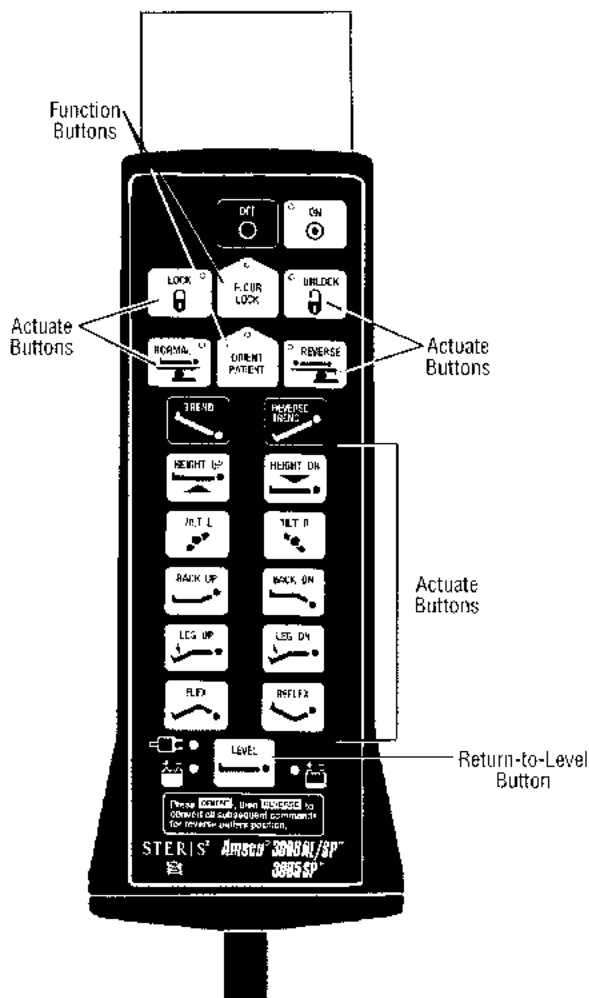


Figure 4-3. Hand Control

Tabletop Positioning

⚠ WARNING – PINCHING HAZARD: Pinch points are created during extreme tabletop articulation. Carefully review illustrations in Figure 2-1 before operating the table.

⚠ WARNING – PINCHING AND TIPPING HAZARD: Patient injury may result if the operator of this table is not completely familiar with the controls for patient positioning and table operation.

⚠ WARNING – PERSONAL INJURY HAZARD: Health care professionals must ensure that patients are positioned and monitored so as to prevent compromising respiration, nerve pathways, or circulation.

⚠ WARNING – PERSONAL INJURY HAZARD: Unanticipated table movement could cause patient injury. Patient must be secured to the table in accordance with recommended positioning practices.

The tabletop may be articulated within the limits shown by use of the hand control positioning buttons or the optional foot control positioning pedals, or by the optional HERMES System. If these controls fail to function, refer to Section 7, Troubleshooting, to see if the problem can be quickly determined and corrected. If problem is not readily apparent, table may continue to be operated per procedures outlined in Section 5, Auxiliary Override Systems. Headrest position and kidney bridge elevation must be adjusted manually as outlined later in this section.

NOTE: Battery-powered tables should be switched OFF after each procedure to prevent unnecessary battery discharge. If low battery condition is indicated by the hand control LED, refer to Section 6 for Battery Charging Procedure.

*The table will continue to function normally for **at least 24 hours** after the "Battery Down" LED (see "Definition of Symbols" in Section 1) first illuminates. If the LED illuminates during a procedure, complete the procedure and recharge the batteries at the end of the day. If the "Battery Down" LED is flashing, immediately connect the AC power cord to the table base and plug into an appropriate AC receptacle (see Figure 6-3).*

» Hand Control Operation

⚠ CAUTION: Route the hand control cord (and optional HERMES-Ready interface cord and/or optional foot control cord, if applicable) clear of any pinch points where the cord(s) could be damaged.

⚠ CAUTION: Hang the hand control from the side rail (or end rail) of the table when not in use, to avoid possible damage to the control.

NOTE: See Section 7, Troubleshooting, to identify problems as indicated by red LEDs on the hand control.

The following functions must be completed before any positioning functions are operable:

- Control turned ON.
- Floor locks engaged.

Adjust the position of the tabletop by using the hand control positioning buttons, as follows (see Figure 4-3):

1. Press the FLOOR LOCK Function button in the center row of buttons on the hand control and **within 5 seconds** (while the LED is still lit), press the desired Actuate button (LOCK or UNLOCK) adjacent to it.
2. Press the ORIENT PATIENT Function button in the center row of buttons, and **within 5 seconds** (while the LED is still lit), press the desired Actuate button (NORMAL or REVERSE) adjacent to it to indicate the orientation of the patient on the table.

If no selection is made, the table will default to NORMAL orientation.

3. Press the desired positioning Actuate button.
4. When the desired position has been reached, release the positioning Actuate button to automatically stop the tabletop and lock it in position.
5. The range of nominal tabletop movements is as follows:

- **Trendelenburg** (TREND button) – 25° maximum from horizontal.
- **Reverse Trendelenburg** (REVERSE TREND button) – 25° maximum from horizontal.
- **Height** (HEIGHT UP and HEIGHT DN buttons) – 27" (686 mm) minimum to 44" (1118 mm) maximum.
- **Side Tilt** (TILT L and TILT R buttons) – 18° maximum to right or to left of horizontal.

NOTE: Momentary delay may occur when activating Side Tilt while the safety mechanism disengages the tilt-lock function.

- **Back** (BACK UP and BACK DN buttons) – up 55° maximum (80° in REVERSE orientation) or down 25° maximum (105° in REVERSE orientation) from horizontal.
- **Leg** (LEG UP and LEG DN buttons) – up 80° maximum (55° in REVERSE orientation) or down 105° maximum (25° in REVERSE orientation) from seat section.

NOTE: FLEX and REFLEX position controls are disabled when in REVERSE patient orientation.

- **Flex** (FLEX button) – back section down 20° maximum with seat section down 25° maximum from horizontal.
- **Reflex** (REFLEX button) – back section up 25° maximum with seat section up 35° maximum from horizontal.
- **Return To Level** – tabletop can be returned to level by pressing the LEVEL button. The table will move in gradual, anatomically correct increments until it reaches level.

NOTE: If the LEVEL button is pressed while the green LED on the ORIENT PATIENT Function button is still lit, the table will not return to level. Wait for completion of the orient patient function (maximum 5 seconds) before pressing the LEVEL button to activate the return-to-level function.

IMPORTANT: When a reversed patient load exceeds 400 lbs (181 kg), certain articulations may be much slower than with a lighter load; for example, Reversed Trendelenburg articulating. Additionally, when using X-ray tops with obese patients, the automatic return-to-level function may not respond until first initiating an independent articulation.

WARNING – TIPPING HAZARD: During an articulation if the table top sections contact an obstruction, the table may tip. Before lowering either the table top or individual sections, remove possible obstructions. Do not allow leg section, when lowered, to contact the floor.

CAUTION: During some extreme articulations, the tabletop may contact the base and/or column shrouds. Take care to avoid positioning the table in such a way as to cause damage to the shrouds.

CAUTION: Use caution when raising the seat section or back section while the kidney bridge is elevated. The section may contact the elevated kidney bridge and damage the bridge and/or section.

» Optional Foot Control Operation

WARNING – PERSONAL INJURY HAZARD: Unanticipated table movement could cause patient injury. Patient must be secured to the table in accordance with recommended positioning practices.

WARNING – PERSONAL INJURY HAZARD: Do not immerse any part of foot control in liquids; this could cause unanticipated table movement, leading to patient injury. Always cover control with a plastic bag before using.

CAUTION: Route the hand control cord (and optional HERMES-Ready interface cord and/or optional foot control cord, if applicable) clear of any pinch points where the cord(s) could be damaged.

An optional foot control assembly is available for use in conjunction with the hand control. See Figure 4-4 for identification of foot control functions.

NOTE: Battery-powered tables should be switched OFF after each procedure to prevent unnecessary battery discharge. If a low battery condition is indicated by the hand control "Battery Down" LED, refer to Section 6 for Battery Charging Procedures.

1. The following must be completed before any foot control positioning functions are operable:

- Hand control connected.
- Control turned ON.
- Floor locks engaged.
- ORIENT PATIENT button activated (green LED on) to indicate patient's position on table (see Figure 4-2).

2. Connect the foot control assembly to the table by aligning the red dot on the gray plug of the foot control cord with the red dot of the gray receptacle on the table, and pushing the plug into the connected position (see Figure 4-5).

NOTE: A spring-loaded lock ring locks plug into receptacle. When disconnecting foot control, pull back on lock ring before pulling plug from receptacle.

NOTE: If foot control and hand control are actuated simultaneously, hand control has priority.

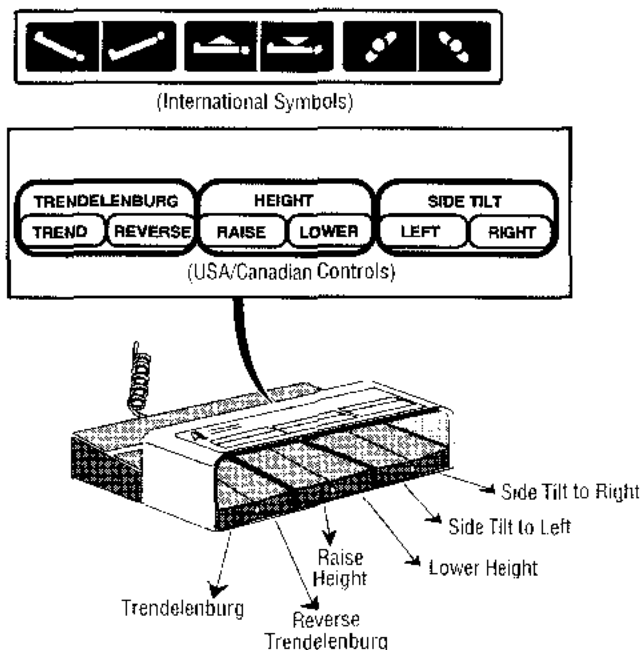


Figure 4-4. Foot Control

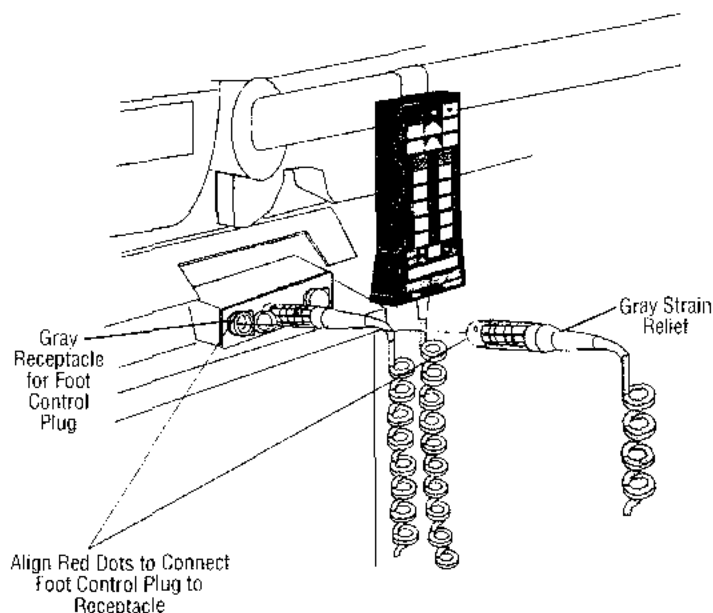


Figure 4-5. Foot Control Connection

⚠ WARNING – TIPPING HAZARD: During an articulation if the table top sections contact an obstruction, the table may tip. Before lowering either the table top or individual sections, remove possible obstructions. Do not allow leg section, when lowered, to contact the floor.

⚠ CAUTION: During some extreme articulations, the tabletop may contact the base and/or column shrouds. Take care to avoid positioning the table in such a way as to cause damage to the shrouds.

⚠ CAUTION: Use caution when raising the seat section or back section while the kidney bridge is elevated. The section may contact the elevated kidney bridge and damage the bridge and/or section.

3. Adjust the tabletop position using the foot control positioning pedals, as follows (see Figure 4-4):

- **Trendelenburg** – 25° maximum from horizontal.

Depress left side (labeled TREND) of TRENDLENBURG pedal (located in the left position of foot control pedals) and release pedal when desired position has been reached to automatically stop tabletop and lock it in position.

- **Reverse Trendelenburg** – 25° maximum from horizontal.

Depress right side of TRENDLENBURG pedal (located in the left position of foot control pedals) and release pedal when desired position has been reached to automatically stop tabletop and lock it in position.

- **Raise Height** – 44" (1118 mm) maximum.

Depress left side of HEIGHT pedal (located in the center position of foot control pedals) and release pedal when desired position has been reached to automatically stop tabletop and lock it in position.

- **Lower Height** – 27" (686 mm) minimum.

Depress right side of HEIGHT pedal (located in the center position of foot control pedals) and release pedal when desired position has been reached to automatically stop tabletop and lock it in position.

- **Side Tilt to Left** – 18° maximum from horizontal.

Depress left side of SIDE TILT pedal (located in the right position of foot control pedals) and release pedal when desired position has been reached to automatically stop tabletop and lock it in position.

- **Side Tilt to Right** – 18° maximum from horizontal.

Depress right side of SIDE TILT pedal (located in the right position of foot control pedals) and release pedal when desired position has been reached to automatically stop tabletop and lock it in position.

NOTE: Momentary delay may occur when activating side tilt while the safety mechanism disengages tilt-lock function.

IMPORTANT: When reversed patient loads exceed 400 lbs (181 kg), certain articulations may be much slower than with lighter loads; for example, Reversed Trendelenburg articulation.

» Care of Controls When Not In Use

⚠ CAUTION: Hang the hand control from the side rail (or end rail) of the table when not in use, to avoid possible damage to the control.

When not in use both during and between procedures, the hand control should be attached to the table side rail.

The foot control, if used, should be bagged and placed on the floor near the surgical area. When the foot control is not required for a procedure, it should be unplugged from the table and stored with other accessories until needed. Never store the foot control (or any other objects) on the table base.

Optional HERMES-Ready System Operation

WARNING – PERSONAL INJURY HAZARD: Unanticipated table movement could cause patient injury. Patient must be secured to the table in accordance with recommended positioning practices.

CAUTION: Route the hand control (and optional HERMES-Ready interface cord and/or optional foot control cord, if applicable) clear of any pinch points where the cord(s) could be damaged.

For voice-activation of the table functions, a HERMES-Ready Amsco 3085 SP table, a HERMES-Ready Interface System, and a HERMES-Ready 3085 SP Hand Control are required.

IMPORTANT: Use the HERMES-Ready 3085 SP hand control with the **blue** strain relief. The standard 3085 SP hand control with a **red** strain relief tail on the connector will not connect to the HERMES-Ready table.

NOTE: Battery-powered tables should be switched OFF after each procedure to prevent unnecessary battery discharge. If a low battery condition is indicated by the hand control "Battery Down" LED, refer to Section 6 for Battery Charging Procedures.

1. The following must be completed before any HERMES Voice-Activated positioning functions are operable:

- Hand control connected (HERMES-Ready unit with blue tail on connection)
- Control turned ON.
- Floor locks engaged.
- ORIENT PATIENT button activated (green LED on) to indicate patient's position on the table (see Figure 4-2).

2. Connect the HERMES Interface System to the HERMES-Ready 3085 SP table by aligning the red dot on the black plug of the HERMES interface cord with the red dot of the black receptacle on the HERMES-Ready table and pushing the plug in to connect it (see Figure 4-6).

NOTE: A spring-loaded lock ring locks the plug into the receptacle. When disconnecting the interface system, pull back on the lock ring before pulling the plug from receptacle.

NOTE: If the HERMES Interface System and the table hand control are actuated simultaneously, the hand control has priority.

3. For operating instructions, refer to the **HERMES Operating Room Control Center Operating and Maintenance Manual and Appendix** provided with the HERMES System.

NOTE: When the HERMES System is powered up and it initially interrogates the table, the HERMES display screen should acknowledge it as the table.

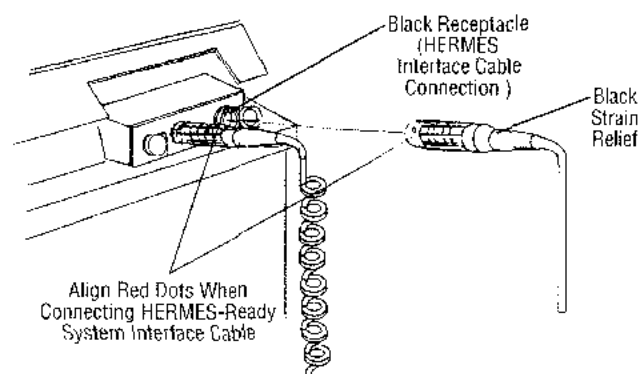


Figure 4-6. HERMES-Ready System Connection

Headrest Positioning

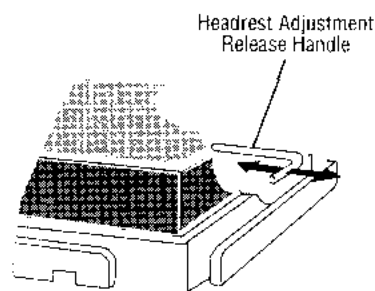


Figure 4-7. Headrest Positioning

The headrest can be attached to either end of table (see Figure 4-1). It is manually adjustable 90° upward and 90° downward from horizontal position. Adjust the headrest to desired position as follows:

1. See Figure 4-7. Locate the release handle (under the right side of the headrest) and pull to release (spring-loaded).
2. Tilt the headrest upward or downward to the desired position, let go of the release handle, then move the headrest slightly until the ratchet mechanism locks it into position.

Kidney Bridge Elevation

WARNING – INSTABILITY HAZARD: Possible patient or user injury, as well as table or accessory failure, may result from using STERIS table accessories for other than their stated purpose – or from using, on STERIS tables, accessories manufactured and sold by other companies.

WARNING – PERSONAL INJURY HAZARD: When installing any table accessory, check for correct attachment and tighten securely (if appropriate). Do not use worn or damaged accessory. Check installation before using any accessory.

CAUTION: Use caution when raising the seat section or back section while the kidney bridge is elevated. The section may contact the elevated kidney bridge and damage the bridge and/or section.

Kidney bridge elevation is manually adjustable up to a maximum height of 4" (101 mm) above the primary tabletop. Adjust the kidney bridge for desired elevation as follows:

1. Locate the kidney bridge ratchet handle (under left side of back section) and flip it down (spring-loaded). See Figure 4-8.

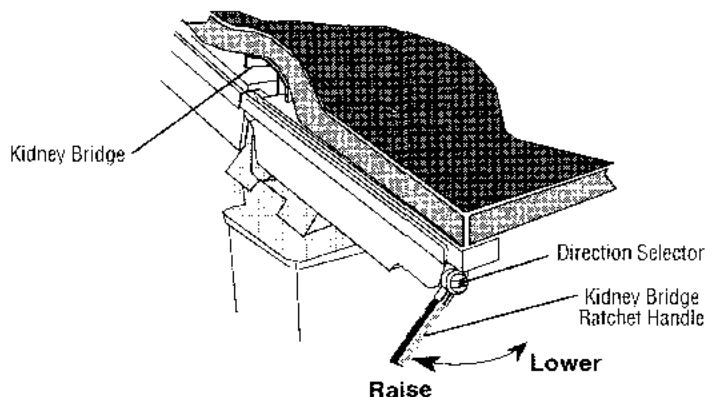


Figure 4-8. Kidney Bridge Adjustment

2. Set the ratchet drive directional control for the type of ratchet on your table (see Figure 4-9):

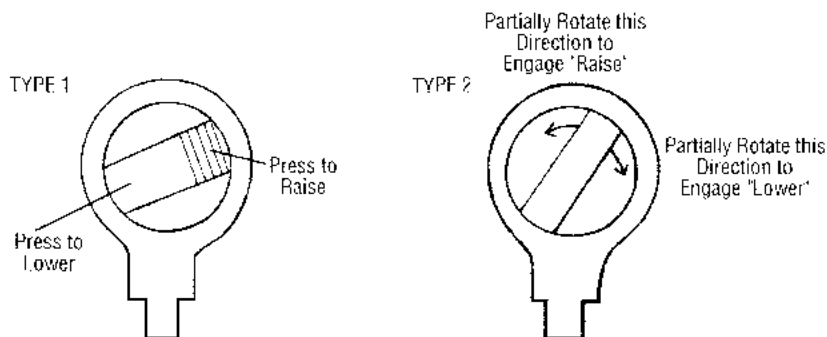


Figure 4-9. Set Ratchet Drive Directional Control

Alternately rotate the ratchet in drive direction and free-return direction until the desired height is reached.

3. Flip the ratchet handle back up into the stored position when elevation adjustment is complete.

Pads and Accessories

⚠ WARNING – INSTABILITY HAZARD: Possible patient or user injury, as well as table or accessory failure, may result from using STERIS table accessories for other than their stated purpose – or from using, on STERIS tables, accessories manufactured and sold by other companies.

⚠ WARNING – PERSONAL INJURY HAZARD: When installing any table accessory, check for correct attachment and tighten securely (if appropriate). Do not use worn or damaged accessory. Check installation before using any accessory.

Mattress pads are backed with Velcro® (Velcro Corp.) strips which fasten to companion strips on the tabletop (see Figure 4-10).

Removable accessories are positioned and secured by clamps or sockets which are applied to (and slide along) the side rails. Contact your STERIS representative for ordering of additional table accessories.

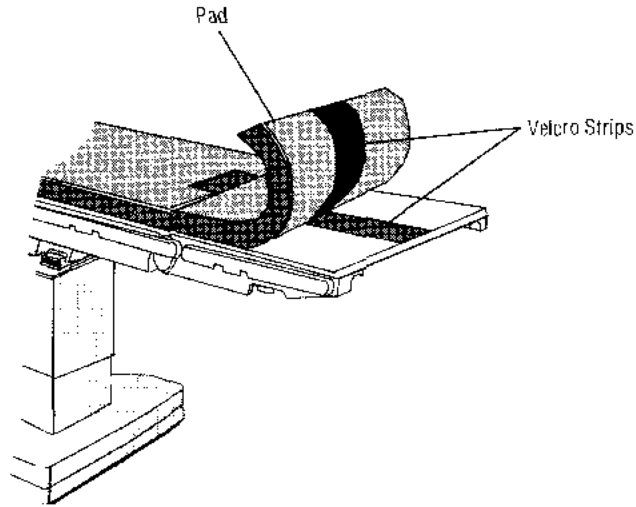


Figure 4-10. Tabletop Pads

» Tabletop Pads

1. To install tabletop pad, place pad in position and press Velcro strips together (see Figure 4-10).
2. To remove, "peel" away from tabletop.

» X-ray Top Accessory

A four-section X-ray top accessory is available from STERIS for use with Amsco 3085 SP tables (see Figure 4-11). Each of the top sections has two types of standoff spacers. The shorter spacers rest on the tabletop, the longer, spring-loaded spacers (which secure the X-ray top) fit into tabletop mounting holes. The position of the longer spacers must be adjusted for the table which is to receive the X-ray top.

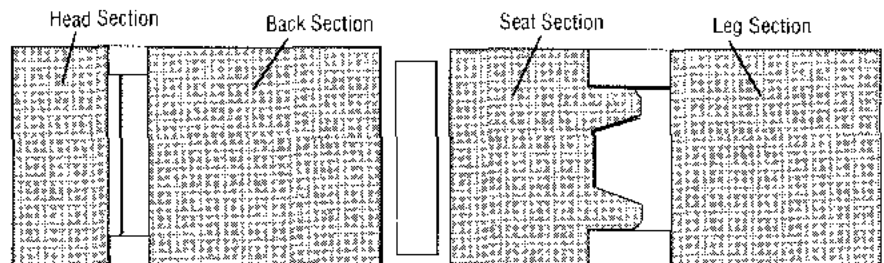


Figure 4-11. X-ray Top Sections

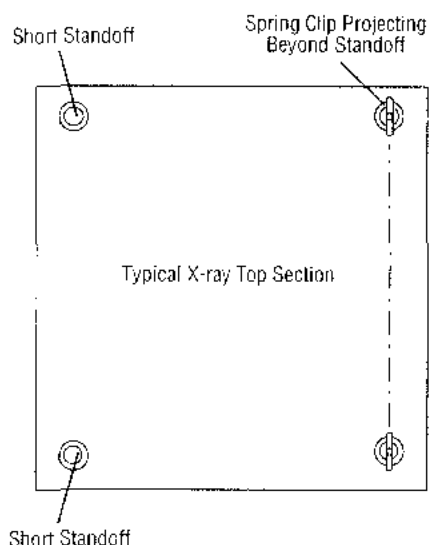


Figure 4-12. X-ray Top Spring Clips and Standoffs

Perform the following for each X-ray top section:

1. Loosen the screws that secure the spring-loaded spacers to the X-ray top section. Position the section on the table.
2. Rotate the spacers so that the spring clips are in line when viewed from beneath the tabletop (see Figure 4-12).
3. Shift the X-ray top section until the mounting screw shaft on one of the spring-loaded spacers is centered in the hole in the X-ray top section. (A 1/16" (1.6 mm) clearance is provided between each screw shaft and its X-ray mounting hole.)
4. Hold the spacer to prevent it from rotating and tighten the screw.
5. Make sure that remaining spring-loaded spacer is flat against the tabletop and center it in its tabletop mounting hole, then tighten the screw.

NOTE: When removing an X-ray top section, grasp it at the corners where the spring-loaded spacers are located and lift straight up. Grasping it at the opposite corners will cause the spacers to bind. Repeat the preceding procedure if the spacers bind when section is lifted correctly.

6. Remove and replace the X-ray top section several times: the X-ray top should lift freely.

» General Accessories Applied To Side Rails

WARNING – PERSONAL INJURY HAZARD: When installing any table accessory, check for correct attachment and tighten securely (if appropriate). Do not use worn or damaged accessory. Check installation before using any accessory.

WARNING – PERSONAL INJURY HAZARD: Do not exceed weight limit that may be specified on accessory or 500 lbs (226 kg), whichever is lower.

1. To install, place clamp (or socket) on side rail and lock in position with knob (or handle) provided (see Figure 4-13).
2. To remove, loosen knob (or handle) and slide clamp (or socket) along side rail until a notch is reached, then remove clamp (socket).

NOTE: Clamp (socket) may also be removed from end of side rail by raising gravity stops.

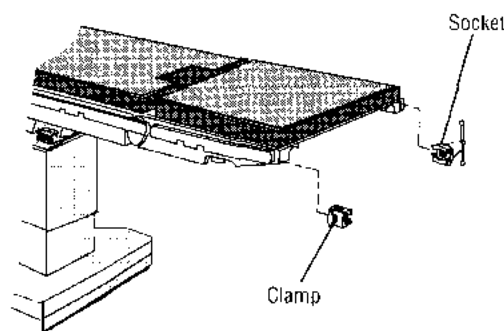


Figure 4-13. General Accessories Applied to Side Rails

» Accessories Specific to Amsco 3085 SP Tables

⚠ WARNING – PERSONAL INJURY HAZARD: When installing any table accessory, check for correct attachment and tighten securely (if appropriate). Do not use worn or damaged accessory. Check installation before using any accessory.

⚠ WARNING – TIPPING HAZARD: Do not use two or more Uro-Endo/Image Amplification Extension Accessories together on the 3085 table.

⚠ WARNING – INSTABILITY HAZARD: Patient Transfer Board must be used as a leg support only. It is not intended to support upper body weight of a patient.

⚠ WARNING – TIPPING HAZARD: Foot Extension Accessory or combination of Foot Extension and Headrest Accessories from previous design STERIS tables must not be used for reverse orientation on the 3085 SP table.

⚠ WARNING – TIPPING HAZARD: When performing surgery requiring a headrest accessory in reversed patient orientation, or when using a Fem/Pop board or the 3080/3085 Ortho Extension accessory, do not exceed 400 lbs (181 kg) patient weight.

⚠ WARNING – TIPPING HAZARD: Do not use the Fem/Pop Board with X-ray Tops for obese patients.

The following special accessories have been developed specifically for use with the Amsco 3085 SP and Quantum 3080 tables. These accessories are not intended to be used with any other previous-design STERIS tables.

- **Eye-ENT-Neuro Headrest Adapter** – inserts into the frame headrest bores to permit use of all previous design headrest accessories on the 3085 table. It maintains the same end-of-table relationship for accessories as when used with previous design tables. (Limited to 300-lb [136 kg] patient load.)
- **Eye-ENT-Neuro Headrest Adapter with 4" Extension** – inserts into the frame headrest bores to extend back section an additional 4" (101 mm). (Limited to 300-lb [136 kg] patient load.)
- **Uro-Endo/Image Amplification Extension** – attaches to back section to provide an additional 8" (203 mm) of I.A. coverage (with headrest attached). It also expands the Uro-Endo procedure capability of table. (Limited to 400-lb [181 kg] patient load.)
- **Patient Transfer Board** – inserts into Uro-Endo/I.A. Extension to support patient's legs during transfer to table. It is intentionally flexible and is intended to be removed after patient is positioned. (Limited to 400-lb [181 kg] patient load.)
- **Drain Tray** – slides onto perineal edge of seat section and Uro-Endo/I.A. Extension. (Not limited to patient weight.)
- **Foot Extension** – clamps to side rails at either end of table to provide additional patient support. (Limited to 500-lb [226 kg] patient load.)
- **Neuro Seat Plate** – placed under pad by hooking support legs onto side rail supports and allowing to rest on top of kidney bridge. It extends leg seat length and provides for less than 90° seating (with kidney bridge elevated) for unique reversed chair posture. (Limited to 400-lb [181 kg] patient load.)
- **Perineal Cutout Filler** – attaches to tabletop to cover cutout and provide additional patient support. (Limited to 400-lb [181 kg] patient load.)
- **Fem/Pop Board** – intended to be installed into leg section only and used as a leg support for improved lower body I.A. coverage. It is not intended to support upper body weight. Do not use the Fem/Pop Board with X-ray tops for obese patients. (Limited to 400-lb [181 kg] patient load.)
- **X-ray Tops** – removable cassettes can be inserted through the head, foot, or side of table. (Acceptable for patient loads up to 500 lbs [226 kg].)
- **3080/3085 Orthopedic Extension** – attaches to seat section to provide a mobile radiolucent orthopedic platform. (Limited to 400-lb [181 kg] patient load.)

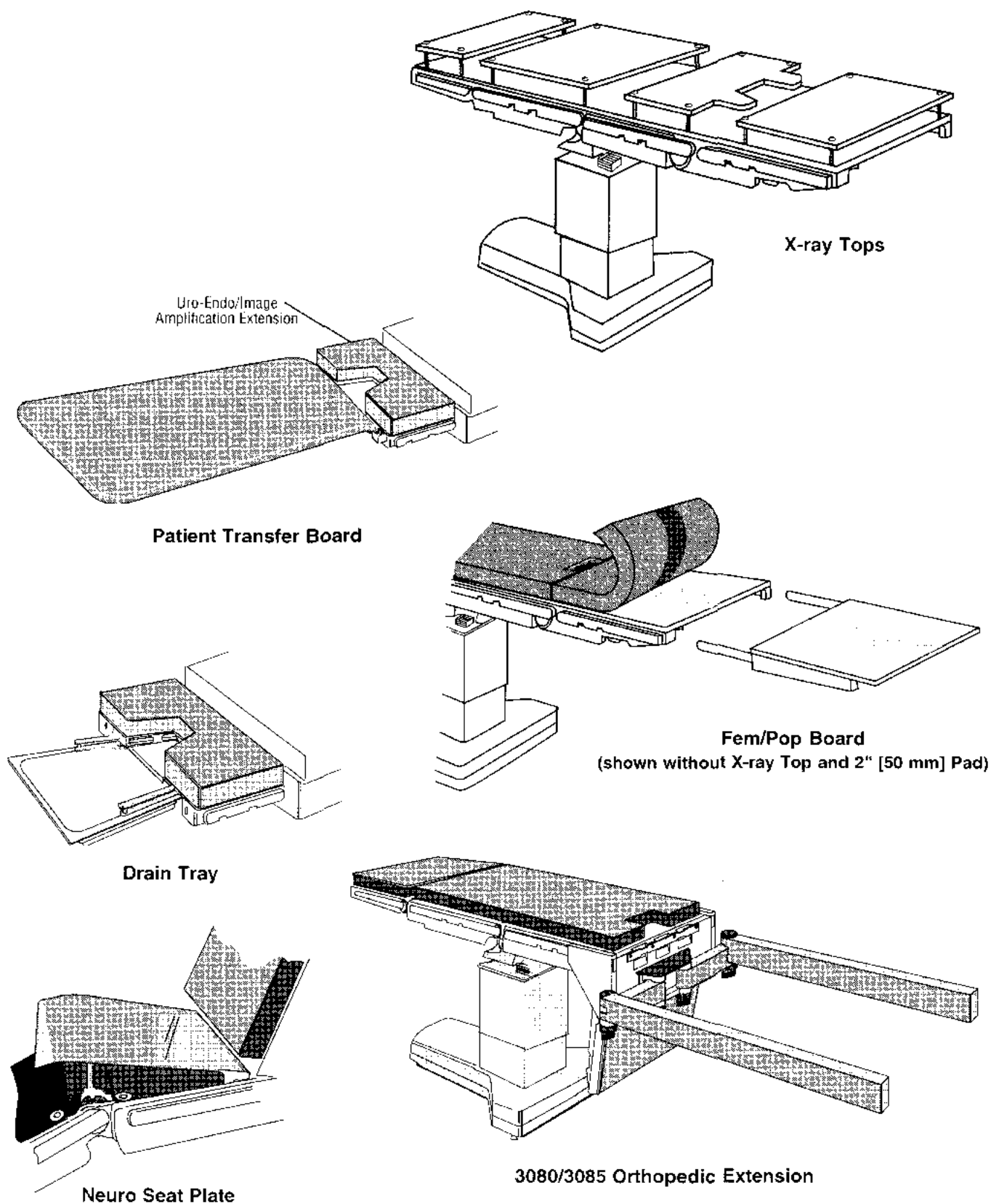


Figure 4-14. Accessories* for Amsco 3085 Tables

*Contact your STERIS Representative for ordering information. Refer to specific accessory descriptions for weight limitations.

⚠ WARNING – EXPLOSION HAZARD: Table must not be used in the presence of flammable anesthetics.

⚠ WARNING – TIPPING HAZARD: Do not articulate table with auxiliary override systems unless floor locks are engaged.

⚠ WARNING – PINCHING AND TIPPING HAZARD: Patient injury may result if the operator of this table is not completely familiar with the controls for patient positioning and table operation.

Table is equipped with Auxiliary Override Systems that can be actuated at any time and that will allow table operation in the event of primary control malfunction.

Articulate table according to the procedures in "Articulation With Electric Pump Power Available" (below) if electric pump power is available, or according to the procedures in "Articulation With No Electric Pump Power Available" (following page) if no pump power is available.

Operate the floor lock auxiliary override systems according to the procedures in "Floor Lock Override Systems" at the end of this section.

NOTE: The auxiliary control switches perform ALL functions to correspond to NORMAL patient orientation only. Actuation of any auxiliary switch overrides and shuts down the primary hand and optional foot controls, and optional HERMES command capability.

Since there are several methods of control for the table, particularly with use of the HERMES System, it is important to understand the hierarchy of the respective controls' override capability over other control methods.

Table control methods are prioritized, from highest override control to lowest, as follows:

1. Auxiliary Control switches (override all commands from those below).
2. Table Hand Control.
3. Verbal command (HERMES System).
4. HERMES Pendant (hand-held) Control.
5. Foot Control (no override capability of other controls).

Articulation With Electric Pump Power Available

WARNING – PINCHING HAZARD: Pinch points are created during extreme tabletop articulation. Carefully review illustrations in Figure 2-1 before operating the table.

WARNING – TIPPING HAZARD: During an articulation if the table top sections contact an obstruction, the table may tip. Before lowering either the table top or individual sections, remove possible obstructions. Do not allow leg section, when lowered, to contact the floor.

CAUTION: During some extreme articulations, the tabletop may contact the base and/or column shrouds. Take care to avoid positioning the table in such a way as to cause damage to the shrouds.

CAUTION: Use caution when raising the seat section or back section while the kidney bridge is elevated. The section may contact the elevated kidney bridge and damage the bridge and/or section.

A row of toggle switches (located on the top of column under the small hood, on the opposite side from the hand control connection; see Figure 5-1) is used for table movements if control power is still available.

Articulate table as follows:

- **Trendelenburg:** 25° maximum from horizontal.

Press **TREND** switch **down** to activate function; release switch when desired position has been reached to automatically stop tabletop and lock it in position.

- **Reverse Trendelenburg:** 25° maximum from horizontal.

Lift **TREND** switch **up** to activate function; when desired position has been reached, release switch to automatically stop tabletop and lock it in position.

- **Height:** 27" (686 mm) minimum to 44" (1118 mm) maximum.

Lift **HEIGHT** switch **up** to **raise** tabletop or press **down** to **lower** tabletop; when desired position has been reached, release switch to automatically stop tabletop and lock it in position.

- **Side Tilt:** 18° maximum to right or to left of horizontal.

Lift **SIDE TILT** switch **up** to **tilt tabletop away** from yourself, or press **down** to **tilt tabletop towards** yourself; when desired position has been reached, release switch to automatically stop tabletop and lock it in position.

NOTE: A momentary delay may occur when activating the side tilt while the safety mechanism disengages the tilt-lock function.

- **Back:** up 55° maximum or down 25° maximum from horizontal.

Lift **BACK** switch **up** to **raise** back section or press **down** to **lower** back section; release switch when desired position has been reached to automatically stop tabletop and lock it in position.

- **Leg:** up 80° maximum or down 105° maximum from horizontal.

Lift **LEG** switch **up** to **raise** leg section or press **down** to **lower** leg section; when desired position has been reached, release switch to automatically stop tabletop and lock it in position.

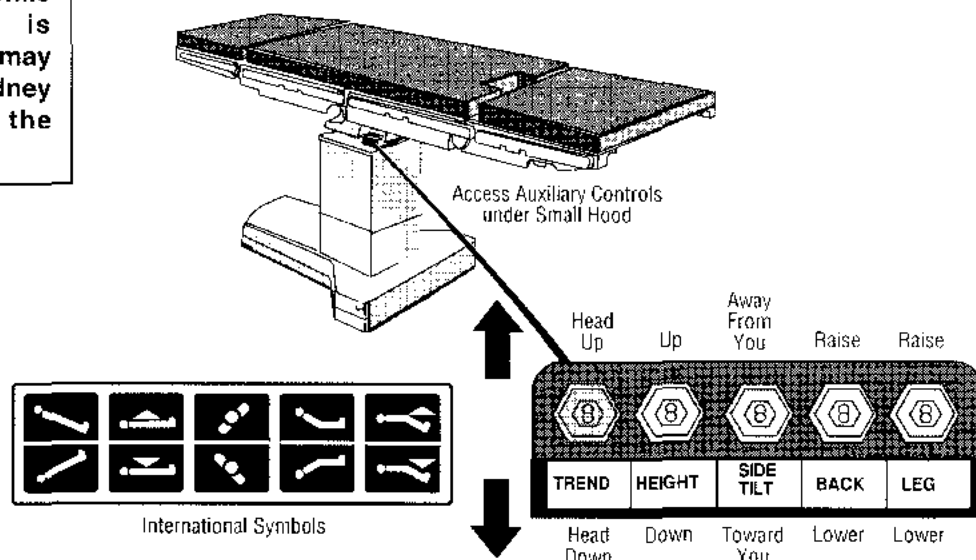


Figure 5-1. Auxiliary Controls (Override Switches)

Articulation With No Electric Pump Power Available

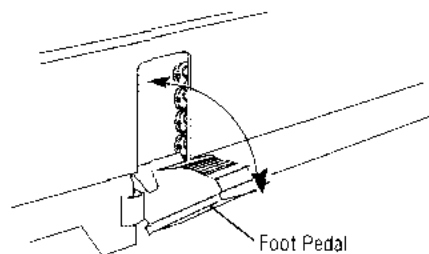


Figure 5-2. Foot Pedal

The toggle switches (or hand/foot control selections) are used in conjunction with the foot pedal for table movements when **no** electric pump power is available.

Articulate table as follows:

1. Flip foot pedal down (see Figure 5-2).
2. Position toggle switches, as outlined in "Articulation With Electric Pump Power Available," for the desired movement (or select movement with hand or foot control).
3. Pump foot pedal manually (while still holding toggle switch [or hand or foot control button/pedal] in position) until desired degree of movement is obtained.
4. Stop pumping foot pedal and release toggle switch (or hand or foot control button/pedal) to stop movement and lock in position.
5. Correct problem or have qualified service technician repair table before further use.

Floor Lock Override Systems

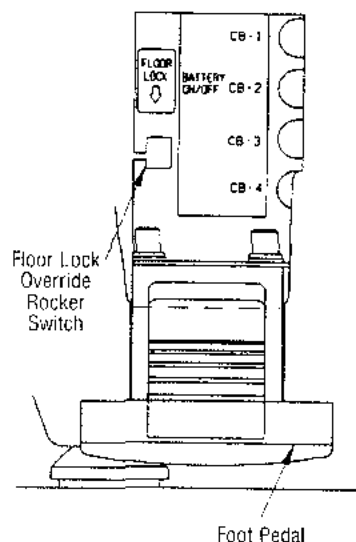


Figure 5-3. Floor Lock Override Switch

A floor lock override switch is located inside the manual pump pedal recess (see Figure 5-3). Flip the pedal down to access the switch (see Figure 5-2).

Operate the override system as follows:

- **If electric pump power is available:** move the rocker switch down to activate the UNLOCK function; release it when the floor locks are retracted and the table is resting on its casters. To activate the LOCK function, move the rocker switch up; release it when the table is resting on its floor locks (the casters swing freely).
- **If NO electric pump power is available:** move and hold the rocker switch down to activate the UNLOCK function and operate the foot pump (or have an assistant operate it) until the floor locks are retracted and the table is resting on its casters. To activate the LOCK function, move and hold the rocker switch up (or have an assistant operate it) until the table is resting on its floor locks (the casters swing freely).

Preventive Maintenance Schedule

WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Safe and reliable operation of this equipment requires regularly scheduled preventive maintenance, in addition to the faithful performance of routine maintenance. Contact STERIS Engineering Service to schedule preventive maintenance.

CAUTION: The use of incorrect hydraulic oil may severely damage the table and/or cause malfunction. Contact your STERIS Service Representative for the proper oil to use.

Maintenance procedures described in Sections 6 and 8 should be performed regularly at the intervals indicated, using the maintenance schedules in Table 6-1 as a guide. Increased usage of the table may result in more frequent maintenance than indicated. Refer to Section 8 for replacement parts list.

Customer should maintain a record of all maintenance procedures performed on the unit.

If an operating problem occurs, refer to Section 7. Troubleshooting.

NOTE: Never permit unqualified persons to service the table.

IMPORTANT: If the table is to be placed in extended storage, have the table prepared for storage by a qualified service technician. Make sure the batteries are disconnected and check the batteries before reconnecting. If the table remains in extended storage for longer than 6 months, the table must be operated through all articulations and the batteries must be charged every 6 months.

Table 6-1. Preventive Maintenance Schedule for Amsco® 3085 SP™ Surgical Table

SERVICE REQUIRED	MINIMUM FREQUENCY
1.0 PREPARATION FOR PREVENTIVE MAINTENANCE 1.1 Discuss equipment with operators. 1.2 Examine side rail hardware. Tighten as required. 1.3 Check X-ray tops for tightness of standoffs. 1.4 Check integrity of cap shroud.	6x per year 6x per year 6x per year 6x per year
2.0 HYDRAULIC SYSTEM 2.1 Replace oil filter element. 2.2 Check hydraulic oil level. 2.3 Check table base, all hoses, fittings and components of hydraulic system for evidence of oil leaks.	1x per year 6x per year 6x per year
3.0 CASTERS AND FLOOR LOCKS 3.1 Check/clean casters. 3.2 Lubricate casters. 3.3 Check floor lock system; have qualified service technician adjust if needed. 3.4 Verify the presence of all foot pads.	6x per year 1x per year 6x per year 6x per year

Table 6-1. Preventive Maintenance Schedule for Amsco 3085 SP Surgical Table (cont'd)

SERVICE REQUIRED	MINIMUM FREQUENCY
4.0 CONTROLS	
4.1 Verify proper operation of all articulations for full motion. <ul style="list-style-type: none"> • Using hand control. • Using override function. • Using manual control (foot pump). • Using foot control, if equipped. • Using battery power, if equipped. 	6x per year 6x per year 6x per year 6x per year 6x per year
4.2 Check integrity of hand control and cord.	6x per year
5.0 ELECTRICAL CHECKS	
5.1 Check that all circuit boards connectors and cable plugs are tight.	6x per year
5.2 Check all cables for damage or fraying.	6x per year
5.3 Verify battery charger voltage (28.5 Volts \pm 1%, motor battery charger at P20; 28.3 Volts \pm 1%, control battery charger at S1/S5 terminals).	2x per year
5.4 Verify battery voltage (13.6-13.8 Volts per battery fully charged at 77°F [25°C]).	2x per year
6.0 TABLE RIGIDITY	
6.1 Check table top for any horizontal or vertical play.	2x per year
6.2 Check side tilt mechanism for any play and insure screws on the top clevis and bottom support bracket are secure.	2x per year
6.3 Lubricate column guide rails.	1x per year
7.0 FINAL TEST	
7.1 Secure all covers and shrouds.	6x per year
7.2 Reinstall any pads that were removed. Check for rips, tears, etc.	6x per year
7.3 Check area to ensure removal of all materials used during inspection.	6x per year

Table 6-2. Recommended Cleaning Products*

Product Name	Product Use
Coverage® Spray HBV	Hospital-grade quaternary-based disinfectant spray
Coverage® HBV Concentrate	EPA-registered Hepatitis-B-effective quat
T.B.Q.®	Detergent-based germicide
Coverage Plus®	One-step germicide disinfectant cleaner
Coverage Spray Disinfectant Cleaner	General cleaner/disinfectant formulated with quaternary ammonium compounds and non-ionic detergents
Germicidal Cloth	Surface disinfectant

* Contact your STERIS representative for ordering information.

Cleaning/Disinfecting Procedures

» Post-Usage

⚠ WARNING – INFECTION HAZARD: To protect against aerosols being reflected from contaminated surfaces, wear rubber or plastic gloves, masks and eye protection and follow OSHA blood-borne pathogens standards when cleaning.

⚠ CAUTION: When cleaning/disinfecting table, do not use phenolics, which may cause patient skin burns if inadequately rinsed off, or alcohol, which does not have sufficient cleaning/disinfection properties.

⚠ CAUTION: When cleaning/disinfecting table, thoroughly read the cleaning fluid directions for use and follow all directions and cautions as shown.

⚠ CAUTION: Cleaning procedures requiring articulation of the table should be performed only by persons familiar with table operation.

⚠ CAUTION: After performing cleaning procedures, ensure pads and X-ray tops are completely dry before reinstalling. Moisture trapped between pads and X-ray tops may contribute to equipment damage, such as X-ray top warpage.

1. Remove gross soil with a disposable cloth and place used cloth in an appropriate biohazardous waste disposal container.
2. Clean tabletop as follows:

- a. Articulate tabletop to level position and place at a comfortable working height.
- b. Remove tabletop pads by pulling upward to free them from the Velcro fasteners (see Figure 6-1) and place on another table or other flat surface.

- c. Holding can 6-8" (150-200 mm) from surface, spray cleaning fluid liberally on top and sides of pads. Clean only one pad at a time.

NOTE: Follow manufacturer's label recommendations when using cleaning fluids/disinfectants.

- d. Wipe sprayed surfaces with a clean lint-free cloth dampened with water to remove cleaning fluid. (Dampening cloth will minimize streaking.)

- e. Wipe the cleaned surfaces again with a clean, damp, lint-free cloth to remove any remaining residue.

- f. Wipe the cleaned surfaces again with a clean, dry, lint-free cloth to remove all moisture.

- g. Repeat steps c, d, e and f for bottom of pads.

- h. Holding can 6-8" (150-200 mm) from surface, spray cleaning fluid liberally on tabletop surfaces exposed when pads are removed.

- i. Repeat steps d, e and f for tabletop surfaces exposed when pads are removed.

- j. Place pads back onto tabletop by aligning with sides of table and pressing into place on the Velcro® (Velcro Corp.) fasteners.

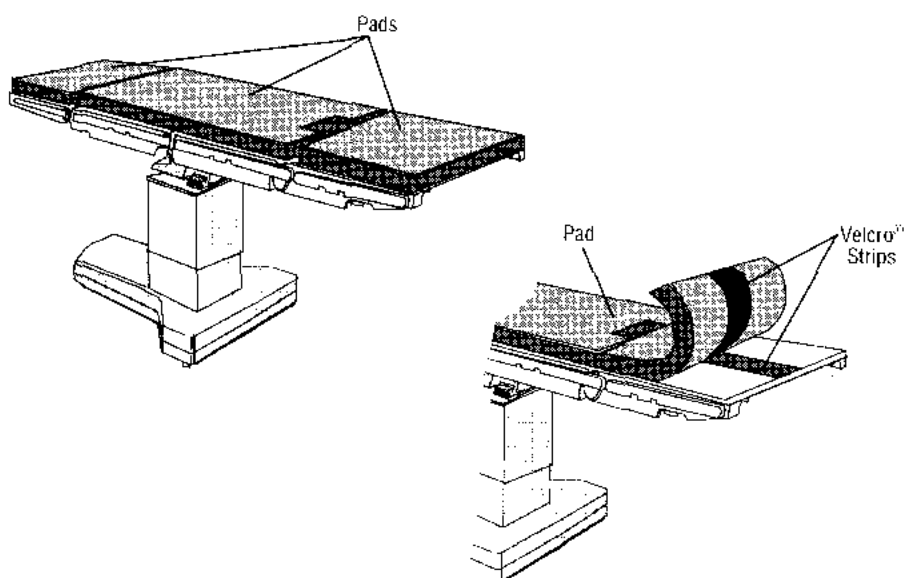





Figure 6-1. Remove Pads for Cleaning

 **CAUTION:** Cleaning procedures requiring articulation of the table should be performed only by persons familiar with table operation.

 **CAUTION:** Do not spray cleaning fluid into electric receptacles and avoid spraying directly on override switches or into clearance space above column. Spray or drippage may settle onto electric circuits inside table causing corrosion and loss of function.


 **CAUTION:** Hang the hand control from side rail (or end rail) of the table when not in use to avoid possible damage to the control.


3. Raise table to maximum elevation to access the lower surfaces.
4. Clean column skirt, cap and shrouds, and entire base surface as follows:
 - a. Holding can 6-8" (150-200 mm) from surface, spray cleaning fluid liberally on column skirt, cap and shrouds.
 - b. Wipe sprayed surfaces with a clean cloth dampened with water to remove cleaning fluid. (Dampening cloth will minimize streaking.)
 - c. Wipe the cleaned surfaces again with a clean, damp, lint-free cloth to remove any remaining residue.
 - d. Repeat steps a, b and c for base surface.
5. Turn control OFF when finished with cleaning tabletop and base.
6. Clean hand control as follows:
 - a. Disconnect hand control from table.
 - b. Holding can 6-8" (150-200 mm) from surface, spray cleaning fluid liberally on hand control and cord.
 - c. Wipe sprayed surface with a clean cloth dampened with water to remove cleaning fluid.
 - d. Wipe the cleaned surfaces again with a clean, damp, lint-free cloth to remove any remaining residue.
 - e. Reconnect hand control to table, and store by attaching to table side rail.

» End-of-Day

Perform all steps of the post-usage cleaning procedure.

» Weekly

 **CAUTION:** Cleaning procedures requiring articulation of the table should be performed only by persons familiar with table operation.

 **CAUTION:** Do not spray cleaning fluid into electric receptacles and avoid spraying directly on override switches or into clearance space above column. Spray or drippage may settle onto electric circuits inside table causing corrosion and loss of function.

1. Perform steps 1 through 4 under the Post-Usage cleaning procedure.
2. Articulate the table through all movements and clean all additional exposed surfaces during these articulations as follows:
 - a. Holding can 6-8" (150-200 mm) from surface, spray cleaning fluid liberally on surface to be cleaned.
 - b. Wipe sprayed surfaces with a clean cloth dampened with water to remove cleaning fluid. (Dampening cloth will minimize streaking.)
 - c. Wipe the cleaned surfaces again with a clean, damp, lint-free cloth to remove any remaining residue.
3. Turn control OFF when finished with cleaning procedures.

Bi-weekly Maintenance



WARNING - PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Repairs and adjustments to this equipment must be made only by fully qualified service personnel. Non-routine maintenance performed by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS Engineering Service regarding service options.

1. Charge batteries per "Battery Charging Procedure" later in this section.

NOTE: Battery-powered tables should have batteries charged a minimum of 38 hours every two weeks (more often if table usage demands).

2. Operate each table function. Operation should be smooth and quiet.

If it is not, call your local STERIS representative who will promptly arrange to have the table placed in proper working order by a factory-trained service technician.

Monthly Maintenance

1. Clean casters and floor locks (see Figure 6-2).
2. Lightly lubricate caster bearings with Lubriplate No. 2 (R-6400-826)*, or equivalent.

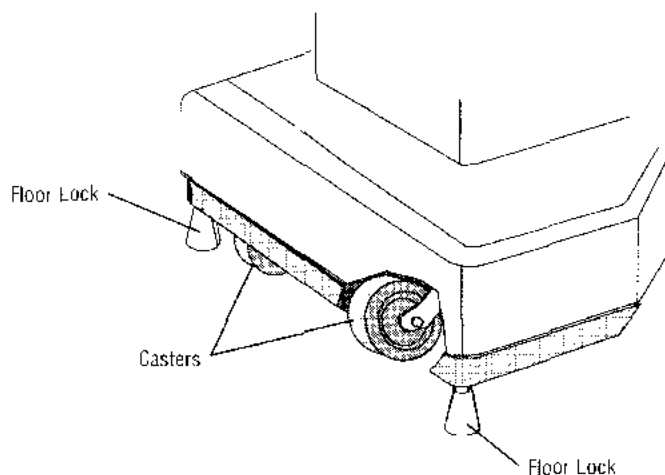


Figure 6-2. Casters and Floor Locks

* Available from your STERIS representative.

Battery Charging Procedure

» Electric-powered Tables

Control batteries* are recharged automatically when table is being used and do not require additional charging.

» Battery-powered Tables

⚠ WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Repairs and adjustments to this equipment must be made only by fully qualified service personnel. Non-routine maintenance performed by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS Engineering Service regarding service options.

⚠ WARNING – TRIPPING HAZARD: Route the power cord to the receptacle in a position so that it will not be tripped over by personnel in the area.

Motor and control batteries* will require recharging on a periodic basis depending on frequency of table usage. Low or discharged battery conditions are indicated by LEDs on the hand control as explained in Section 7, "Hand Control Diagnostic Chart".

Lead acid batteries last longer if NOT fully discharged. Therefore, to obtain the longest life and capacity from your 3085 batteries, always connect AC power cord to table base and plug into an appropriate AC receptacle as often as possible, and as long as possible. If this is not always possible, recharge batteries at the following times:

- When the table is first put into service.
- Every 2 weeks when the table is in normal service; more often if usage demands
- Whenever a low battery indicator LED is on.
- If the table remains in extended storage for longer than 6 months; batteries must be charged every 6 months.

NOTE: If batteries will not charge, refer to Section 7 for possible causes and corrective actions.

Recharge batteries as follows:

1. Connect AC power cord to table base and plug into an appropriate AC receptacle (see Figure 6-3).
2. Allow a **minimum of 48 hours** for full battery charge. See chart below:

Charging Time	Portion Charge
24 hours	90%
36 hours	95%
48 hours	100%

3. Verify low battery indicator LED is off and disconnect AC power.

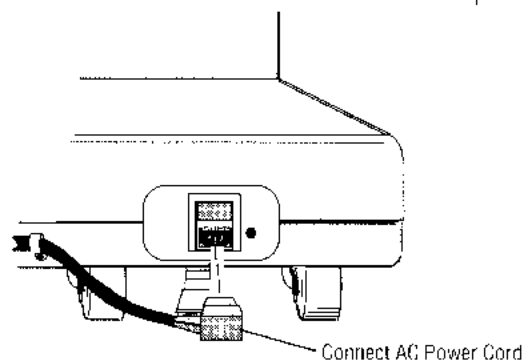


Figure 6-3. Charge Batteries

* All motor and control batteries are a sealed, lead-acid gel electrolyte-type, with a nominal life of 4 years.

⚠ WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Safe and reliable operation of this equipment requires regularly scheduled preventive maintenance, in addition to the faithful performance of routine maintenance. Contact STERIS Engineering Service to schedule preventive maintenance.

This section describes the types of table malfunctions most likely to occur, and probable causes and corrective actions. Use the Operator Troubleshooting Chart to identify general problems. Use the Hand Control Diagnostics Chart to identify problems as indicated by the hand control LEDs.

If you are unable to correct the problem with the use of the Operator Troubleshooting Chart or the Hand Control Diagnostics Chart, or if a problem occurs not described on the charts, please contact your STERIS Engineering Service representative. A trained service technician will promptly place your equipment in proper working order.

NOTE: Never permit unqualified persons to service the table.

Table 7-1. Operator Troubleshooting Chart

PROBLEM	POSSIBLE CAUSE AND CORRECTIVE ACTION
1. Cannot turn table ON.	1. Hand control not connected – Connect per Section 3. 2. Hand control defective – Replace.
2. No power to pump motor; table will not articulate.	1. Table unplugged (electric-powered table only) – Plug in. 2. No facility power (electric-powered table only) – Turn facility power on. 3. F1 or F2 fuse blown (electric-powered table only) – Replace fuse(s) per Section 8. 4. AC power cord defective (electric-powered table only) – Replace power cord. 5. Batteries totally discharged (battery-powered table only) – Recharge batteries per Section 6. 6. Circuit breaker CB-1 tripped (electric-powered table only) – Reset per Section 8. 7. Circuit breaker CB-2 tripped (battery-powered table only) – Reset per Section 8.
3. Motor batteries will not charge (battery-powered table only)	1. Circuit breaker CB-4 tripped – Reset per Section 8. 2. Circuit breaker CB-2 tripped – Reset per Section 8. 3. AC power cord defective – Replace power cord.

Table 7-2. Hand Control Diagnostics Chart

NOTE: When power supplies are operational and the table is plugged into an AC receptacle, the ON touch pad green LED and AC power green LED will be on.

INDICATION	CONDITION	CORRECTIVE ACTION
1. Control ON – green AC LED is on and red BATTERY LED is flashing.	AC power connected: low or discharged batteries (battery-powered table only).	Charge batteries per Section 6.
2. Control ON – green BATTERY LED on and red BATTERY LED flashing.	Low or discharged batteries (battery-powered table only).	Charge batteries per Section 6. <i>NOTE: If batteries are totally discharged, control shutdown will occur after 3-1/2 minutes when table is in use or after 30 seconds if condition exists at power up.</i>
3. Control ON – green BATTERY LED (only) on when table plugged into AC receptacle.	Battery level acceptable: faulty battery charger or power circuit (battery-powered table only).	<ol style="list-style-type: none"> 1. Check AC power cord – Replace power cord if necessary. 2. Check F1 and F2 fuses – Replace fuse(s) if necessary. 3. Reset circuit breaker CB-3 4. Reset circuit breaker CB-4 5. Reset circuit breaker CB-1
4. All green, yellow, and red LEDs flashing.	No communication between table control and hand control.	<ol style="list-style-type: none"> 1. Check hand control connection per Section 3. 2. Replace hand control if necessary.
5. Green ON LED flashing.	1. Optional foot control switch was actuated when hand control switched ON; control logic error disables foot control functions.	Turn hand control OFF, then ON to reset controls.
	2. Faulty foot control; foot control function is disabled.	Replace foot control.

Table 7-2. Hand Control Diagnostics Chart (continued)

INDICATION	CONDITION	CORRECTIVE ACTION
6. All LEDs are off (not lit).	1. Hand control unplugged while table control ON; control automatically shuts off after 2 minutes	Reconnect hand control per Section 3.
	2. AC power off (electric-powered table only); control automatically shuts off 6 hours after last function selected.	Reconnect AC power cord per Section 3.
	3. Floor locks off (battery-powered table only); control automatically shuts off 30 minutes after last function selected.	Activate floor locks per Section 3.
	4. AC power off (battery-powered table only); control automatically shuts off 24 hours after last function selected.	Reconnect AC power cord per Section 3.
7. Hand Control will not physically plug into the table.	1. Hand control plug will not slide into receptacle.	1. Check the control: The standard hand control has a 6-pin connector and will not fit the HERMES-Ready 3085 SP table.
		2. Check the control: The HERMES-Ready hand control has an 18-pin connector and will not fit the standard 3085 SP table.
		3. If plug or receptacle is deformed, it must be replaced.

NOTE: For troubleshooting of the optional HERMES-Ready system, refer to the HERMES Operating Room Control Center Operating and Maintenance Manual, provided with the HERMES System.

⚠ WARNING – PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Repairs and adjustments to this equipment must be made only by fully qualified service personnel. Non-routine maintenance performed by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS Engineering Service regarding service options.

The material in this section is provided to allow for servicing components of the table most likely to need attention. These procedures are more advanced than cleaning and replacing expendables. These procedures should always be performed by an experienced, trained service technician.

Reset Circuit Breakers

Four circuit breakers (CB-1, CB-2, CB-3 and CB-4) protect various table components* and may be reset if tripped by a fault condition. When tripped, the circuit breaker will pop out and is readily detectable.

Reset circuit breakers as follows:

1. Lower foot pedal on table base to access the circuit breakers (located on right of opening when foot pedal is down). See Figure 8-1.
2. Press in on the protective boot covering the circuit breaker to reset.
3. Raise foot pedal back into stored position.

* CB-1 protects power transformer.
CB-2 protects motor batteries and has extra internal manual on/off switch.
CB-3 protects motor battery charger.
CB-4 protects control power supply.

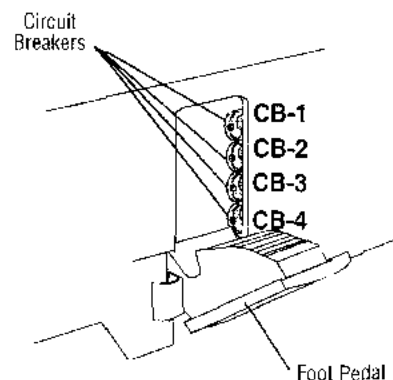


Figure 8-1. Circuit Breakers

Change Fuses

Two replaceable fuses (F1 and F2) are located in a cartridge above the AC input in the table base. If one or both of the fuses are blown by a fault condition, replace as follows:

1. Disconnect AC power cord from wall receptacle and table base input (see Figure 8-2).
2. Pry cartridge out with a small screwdriver to access the fuses.
3. Remove blown fuse(s) and replace. Refer to Table 8-1 for correct rating and part number of fuses.
4. Push cartridge back into connected position and reconnect AC power cord to table. Plug cord into wall receptacle.

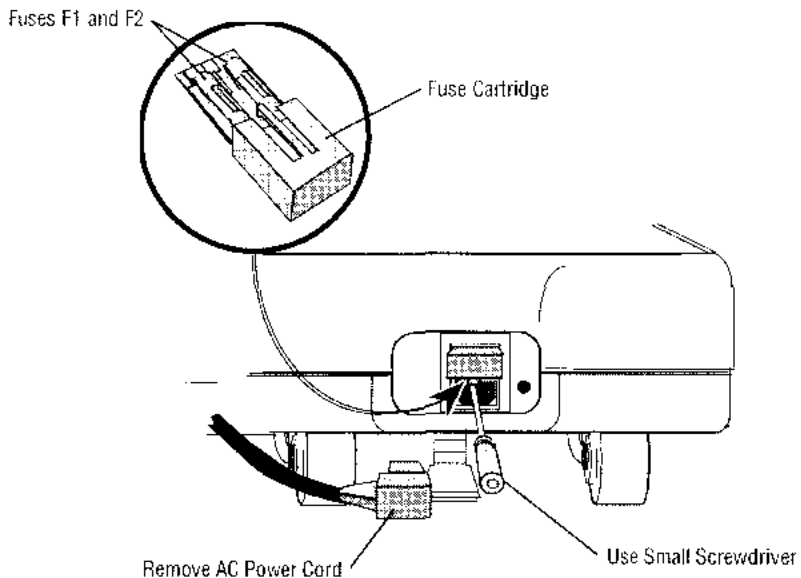


Figure 8-2. Fuse Location

Two replaceable fuses (F3 and F4) are located internal to the table. These require removal of the base shroud for access. Replacement of these fuses must be made only by a fully qualified service technician. Refer to Table 8-1 for correct rating and part number of fuses.

Disconnect the Motor Battery

CB-2 circuit breaker, in addition to being a protective device, includes an internal, manually operated ON/OFF switch. If necessary, the motor battery can be disconnected from the table circuit as follows:

1. Press in on the protective boot covering the CB-2 circuit breaker until a "click" is felt.
2. Release the button.
3. In the OFF position, the button is popped out much the same as when the circuit breaker is tripped. To reset, see "Reset Circuit Breakers" at the beginning of this section.

Replacement Parts

The parts listed in Table 8-1 are those that would be necessary to do minor maintenance on the Amsco 3085 SP Table.

To order replacement parts, proceed as follows:

1. Include the part number and description listed in Table 8-1.
2. Include the model and serial numbers of your equipment on your order.
3. Send your order directly to STERIS Customer Service.

Contact STERIS Customer Service if you need parts that are not listed in Table 8-1.

NOTE: Use only STERIS authorized parts on the equipment. Use of unauthorized parts will void the warranty.

Table 8-1. Amsco® 3085 SP™ Replacement Parts

Description	Part Number		Recommended Spares
Power Cord Types Available <ul style="list-style-type: none"> • USA Plug, USA Cord • USA Plug, IEC Cord • Schuko Plug, IEC Cord • Australian Plug, Orange Cord • English Plug, IEC Cord 	P-93909-354 P-56397-682 P-56397-687 P-56397-686 P-56397-684 (see NOTE 2)		One (1) spare of the type you use. If your plug is not in this list, order the Power Cord type nearest to your applications, cut the plug off and install your plug in its place. Always use a grounded plug.
Fuse Applications <i>(see NOTES 3 and 4)</i>			
• 120 AC Volt Application F1 and F2 F3 F4	P-93909-225 P-93909-222 P-89371-091	(6 Amp, USA) (0.5 Amp, USA) (1 Amp, USA)	10 5 5
• 120 AC Volt Application (Export): F1 and F2 F3 F4	P-150823-292 P-129360-586 P-150823-248	(6 Amp, IEC) (0.5 Amp, IEC) (1 Amp, IEC)	10 5 5
• 100 AC Volt Application F1 and F2 F3 F4	P-150823-292 P-129360-586 P-150830-131	(6 Amp, IEC) (0.5 Amp, IEC) (1.6 Amp, IEC)	10 5 5
• 220 AC Volt Application F1 and F2 F3 F4	P-129360-587 P-129360-585 P-129360-586	(4 Amp, IEC) (0.25 Amp, IEC) (0.5 Amp, IEC)	10 5 5
• 230/240 AC Volt Application F1 and F2 F3 F4	P-129360-587 P-129360-585 P-129360-586	(4 Amp, IEC) (0.25 Amp, IEC) (0.5 Amp, IEC)	10 5 5
Batteries	See NOTE 1		See NOTE 1

NOTES:

1. This table uses lead-acid batteries. Lead-acid batteries normally are subject to self-discharge and battery-life deterioration in long-term storage. Therefore, STERIS does not recommend that batteries be procured and then stored as spare parts. If batteries are procured and stored, they should be kept covered and in a cool, dry area. Stored batteries should be recharged every 6 months to minimize life deterioration. Use a charging current commensurate with the battery amp-hour size. Charge to a floating charge voltage equivalent to 13.6-13.8 volts.
2. The cords are approximately 6 metre (20 feet) long, except for the Australian cord which is only 4 metre long.
3. USA fuses are AGC or ABC or MTH, and are also for use in Canada.
4. IEC fuses are IFC glass fuses. IEC fuses for F3 and F4 require IEC fuseholder, STERIS part number P-129360-654.

⚠ CAUTION: Static electricity can damage microprocessor controls. Indiscriminate probing of circuits or improper connections may result in immediate or delayed electrical failure. If the electronics are to be accessed, use a personal grounding device. Exercise care in all activities involving the electronic circuitry.

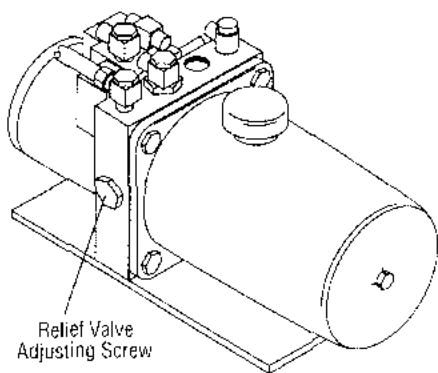
⚠ CAUTION: Always connect power cord to a properly grounded socket.

IMPORTANT: Unless otherwise specified, all Amsco® 3085 SPT™ tabletop sections are designated by their names for a patient in the normal (not reversed) position. Also, all tests requiring table articulation are to be done utilizing the hand control with the LEFT patient orientation button (normal position) actuated, and with the table plugged in and supplied with its specified voltage.

Test Instrumentation Required

1. Spring scale - P-757290-091.
2. Pressure gauge - P-764322-738.
3. Protractor - P-764322-747.
4. Lint-free cloth - R6200-400.

Hydraulic Pump Relief Valve



1. Remove the cap from the pressure test port located on the pump pressure port banjo fitting (see Figure 9-1).
2. Install the pressure gauge into the test port using the DIN (European) adapter.
3. Using the override switches, operate a table function to the end of its limit (mechanical stop). With the movement stopped but the pump still running (pump dead-headed), check the relief valve setting by monitoring the gauge. The setting should be 1750 (-25 or +50) psi.
4. If adjustment is necessary, loosen the locking or jam nut on the adjusting screw. Rotate the adjusting screw until the proper pressure is reached.
5. Remove the pressure gauge and reinsert the test cap.

**Figure 9-1. Hydraulic Pump
Relief Valve**

Table Observation

1. Check entire table for proper fit and finish of all exposed parts. Check for any burrs, sharp edges or corners to which users could be exposed. Correct as necessary.
2. Using a Clark socket, be sure socket slides freely over each side rail and that the rivet stops and gravity locks prevent the socket from being removed. Be sure each gravity lock swings freely.
3. Flip the foot pump pedal up and down several times to be sure it pivots smoothly and stays in position.
4. Articulate the headrest throughout its range (+90° to -90°). Be sure the ratchet action is normal and the release handle operation is smooth throughout the range.
5. Raise the kidney bridge to its maximum height (top surface of bridge should be at least 3-7/8" (98 mm) from top surface of leveled back section). Be sure ratchet action is smooth and normal throughout. Flip handle into and out of its stowed position several times, be sure detent retains handle in the stowed position.

Table Mobility

NOTE: The following tests are to be done with the floor locks disengaged, with the tabletop horizontal and at maximum elevation, and on a smooth level surface.

1. Move the table forward, backward, left and right: 3" (914 mm) minimum in each direction. Be sure the casters operate smoothly and without unusual noise.
2. Move the table longitudinally, with the headrest leading, until the casters are aligned for movement in that direction. Attach a spring scale to end of leg section on table centerline. Slowly push table straight ahead. Gauge reading should be less than 35 lbs (16 kg).
3. With table in same alignment, slowly push at right angles to table centerline, at outboard end of left side rail on table headrest. Gauge reading should be less than 20 lbs (9 kg).

Floor Lock Assembly

1. With table on a level floor, engage the floor locks.
2. Check distance between each caster and floor: it should be $1/4 \pm 1/32"$ (6 ± 0.8 mm). If adjustment is necessary, refer to Section 12.

Table Articulation

1. Articulate each table function through the entire range and ensure that there are no unusual noises, speed variations or other performance problems. Table speed and range of movement should fall within parameters shown in Table 9-1.
2. Actuate the RAISE function for at least 30 seconds. This causes the pump to develop maximum pressure and the relief valve to be fully employed. There should be no chattering, squealing, or other unusual noises.
3. Refer to Table 9-2 (for electric table) and Table 9-3 (for battery-powered table) and articulate the table through the various functions using the conditions described.

NOTE: If a battery-operated table, the base shroud must be removed for the last three conditions - see Step 4.
4. Remove table column and base shrouds as described in Section 12.
5. Thoroughly examine table assembly for evidence of any hydraulic leaks, mechanical wear, electrical wire abrasion, or any other degradation. Articulate each table function again through the entire range and ensure that there are no unusual noises, speed variations, or other performance problems.

Table 9-1. Table Articulation Movement and Times

Articulation	Note	Units	Movement		Time (seconds)	
			Min.	Max.	Min.	Max
Minimum Elev.	(1)	inches	26.5	27.5	12	24
Maximum Elev.	(1)	inches	43.5	44.5	12	24
Left Tilt	(2)	degrees	16.0	20.0	5	17
Right Tilt	(2)	degrees	16.0	20.0	5	17
Trendelenburg	(2,4)	degrees	22.0	27.0	10	22
Rev. Trend	(2,5,6)	degrees	22.0	27.0	12	22
Back Up	(2)	degrees	53.0	57.0	15	28
Back Down	(2,6)	degrees	23.0	-27.0	17	29
Leg Up	(3)	degrees	79.0	81.0	24	26
Leg Down	(3)	degrees	-104.0	-107.0	24	29
NOTES (1) From floor to leveled back top surface, no pads (2) Referenced to the column stage block (3) Referenced to seat section. (4) Measure back section angle (5) Measure seat section angle. (6) Assure overtravel by actuating override switch.						

Table 9-2. Test Functions - Electric Table

AC Cord	Pump	Control
Connected	Electric	Foot Control
Connected	Electric	Override Switches
Disconnected	Manual	Hand Control
Disconnected	Manual	Foot Control
Disconnected	Manual	Override Switches

Table 9-3. Test Functions - Battery-Operated Table

AC Cord	Motor Bat.	Pump	Control
Connected	Connected	Electric	Foot Control
Connected	Connected	Electric	Override Switches
Disconnected	Connected	Electric	Foot Control
Disconnected	Connected	Electric	Override Switches
Disconnected	Disconnected	Manual	Hand Control
Disconnected	Disconnected	Manual	Foot Control
Disconnected	Disconnected	Manual	Override Switches

//////////////////////////////////// **Tabletop Raise/** **Lower** ////////////////////////////////////

1. Lower table to minimum elevation. Check distance from floor to leveled back top surface (without pad). See Table 9-1.
2. Raise table to maximum elevation. Check distance from floor to leveled back top surface (without pad). See Table 9-1.
3. With table at maximum elevation, check limit switch LS5. The switch should be made (roller engages "V" slot) at $1/16" \pm 1/32"$ (1.6 ± 0.8 mm) before table reaches its maximum mechanical stop. If necessary, loosen the switch mounting bracket screws and reposition the switch so that is the case. Repeat Step 2.

NOTE: The following test is to check tabletop "lash," which falls into three categories: longitudinal, lateral, and rotational. It is normal for the tabletop to have a certain amount of lash and adjustments should be made only when the lash exceeds the amount specified.

4. Engage floor locks, level tabletop and raise table to maximum elevation.
 - a. **Longitudinal Lash* and Rigidity** (see Figure 9-2): Hang or apply 50 lbs of force on the end of the headrest on the table centerline. Measure the amount of vertical movement at the outboard end of the left back-section siderail when the 50-lb (22.7 kg) weight is moved to the end of the leg section on the table centerline. The measurement shall not exceed 1/4" (6 mm).

* Lash is the clearance or "play" between adjacent movable mechanical parts.

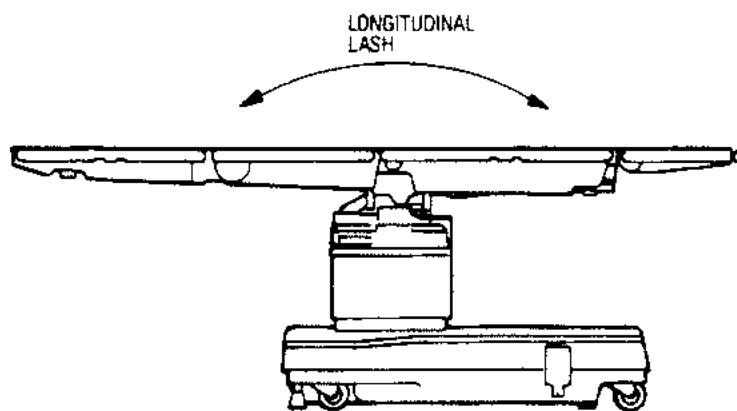


Figure 9-2. Longitudinal Lash

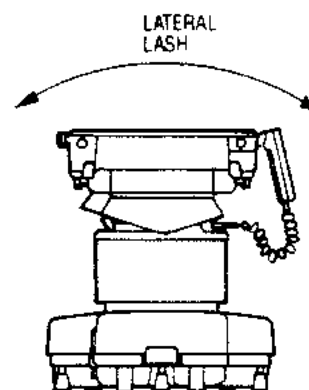


Figure 9-3. Lateral Lash

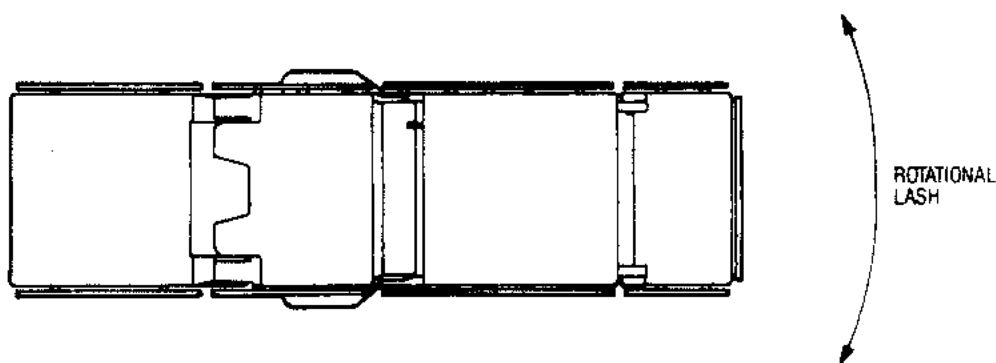


Figure 9-4. Rotational Lash

- b. **Lateral Lash* and Rigidity** (see Figure 9-3): Hang or apply 50 lbs (22.7 kg) of force on the left side rail at the seat/back joint. Measure the amount of vertical movement at the outboard end of the left back section when the 50-lb (22.7 kg) weight is moved to the right side. The measurement shall not exceed $3/32$ ".
- c. **Rotational Lash* and Rigidity** (see Figure 9-4): Push in the horizontal plane with 50 lbs (22.7 kg) applied (or 50 lbs force exerted) at right angles to the outboard end of the right leg-section siderail. Measure the amount of movement at the outboard end of the left back-section siderail when the 50 lbs (22.7 kg) is removed and a push of 50 lbs (22.7 kg) is applied to the outboard end of the right back-section siderail. The measurement shall not exceed $3/16$ " (2.4 mm).

NOTE: If it is determined that the tabletop has excessive lash, check to be sure the lash is due to the column being out of adjustment. With the column and base shrouds removed, apply an alternating load to the tabletop as outlined above while observing the column for motion between its upper and lower sections. If the lash is due to the column, it should be adjusted as outlined in Step 5.

* Lash is the clearance or "play" between adjacent movable mechanical parts.


5. Position tabletop to minimize the load on the column. Attach the headrest to the back section. Actuate the leg section to its full up position. Level the seat section, back section and headrest. See Section 12 for information on lash adjustment.

IMPORTANT: Do not remove all the column lash, which would inadvertently make the column too tight, creating excessive loads on the bearings and producing premature bearing failure. Removal of all column lash could also produce a sticking condition on the column so that it will not lower after remaining at one height for a period of time.

Tabletop Tilt

1. Articulate the tabletop in full lateral LEFT TILT and then full lateral RIGHT TILT. Tilt as referenced to the column stage block should be $18^\circ \pm 1^\circ$.
2. The maximum right and left tilts must be within 2° of each other. Calculate the difference by subtracting the recorded right tilt angle from the left tilt angle. If necessary, adjust cylinder rod (see Section 12).

Tabletop Limit Switches

 **WARNING - PERSONAL INJURY HAZARD:** Pinch point areas exist between top sections and saddle casting. Keep hands clear while moving top and turn table off during adjustments.

» LS3 - Seat Section Limit Switch

1. With the tabletop sections horizontal, manually depress limit switch LS3, mounted to saddle under seat section. Attempt to actuate FLEX. The pump should turn on, but no motion should occur. Repeat for REVERSE TRENDELENBURG.
2. With the switch released, actuate the same functions. When motion has started, depress the switch. The pump should stay on and motion should stop.
3. Starting with the tabletop horizontal, actuate BACK RAISE at least 10 degrees to insure that the articulation actuates the seat limit switch. Actuate REVERSE TRENDELENBURG until motion stops. Check that the seat limit switch LS3 actually stopped the motion by actuating REVERSE TRENDELENBURG with the override control switches located on the shroud cap. The seat section should move further down by a small amount.
4. If limit switch LS3 does not function as described above, check to be sure it is being actuated when seat section is within $0.5^\circ \pm 0.3^\circ$ of its mechanical stop (use REVERSE TRENDELENBURG function). If limit switch requires adjustment, refer to Section 12.

» **LS4 - Back Section Limit Switch**

1. With the tabletop sections horizontal, manually depress the switch mounted to the underside of the back section. Attempt to actuate FLEX. The pump should turn on, but no motions should occur. Repeat for TRENDLENBURG and BACK LOWER.
2. With the switch released, actuate the same functions. When motion has started, depress the switch. The pump should stay on and motion should stop.
3. Starting with the tabletop horizontal, actuate BACK LOWER until motion stops. Check that motion stopped due to the back limit switch by actuating BACK LOWER with the override control switches located on the shroud cap. The back section should move further down by a small amount.
4. If limit switch LS4 does not function as described above, check to be sure it is being actuated when back section is within $0.5^{\circ} \pm 0.3^{\circ}$ of its mechanical stop (use TRENDLENBURG function). If the limit switch requires adjustment, refer to Section 12.

» **LS5 - Column Limit Switch**

1. Using hand control, actuate tabletop RAISE and LOWER functions, checking to make sure LS5 stops table motion $1/16" \pm 1/32"$ (1.6 ± 0.79 mm) before maximum table height.
2. If adjustment is necessary, refer to Section 12.

Tabletop Back Section

1. Articulate back section to its full DOWN position (use normal patient orientation). Measure and record angular position of both right and left side as referenced to the column stage block. The measured angles must be $25^{\circ} \pm 1^{\circ}$. The amount of racking must be $1/2^{\circ}$ or less.
2. If adjustment is necessary, refer to Section 12.

Tabletop Seat Section (Trendelenburg/Reverse Trendelenburg)

1. Articulate the seat section to its full DOWN position. Measure and record its angle as referenced to the column stage block. It should be $25^{\circ} \pm 1^{\circ}$.
2. If adjustment is necessary, refer to Section 12.

Tabletop Leg Section

1. Articulate the leg section to its full up position using override switches. Measure and record the angle of each leg frame.
2. The measured angles must be $81^{\circ} \pm 1^{\circ}$ and within 1° of one another. If adjustment is necessary, refer to Section 12.
3. Articulate the leg section to its full down position, measure and record the angle of each leg section frame.
4. The measured angles must be $105^{\circ} \pm 1^{\circ}$ and within 1° of each other. If adjustment is necessary, refer to Section 12.

Self-Leveling Test Procedure

1. Position the table top such that the following positions are at least 10° from level:
 - Left tilt
 - Seat up
 - Back up
 - Leg down
2. Actuate Return to Level. Tilt, back and seat must return to within 2° of horizontal, and the leg section must return to within 2° of the seat section.
3. Position the table top such that the following positions are at least 10° from level:
 - Right tilt
 - Seat down
 - Back down
 - Leg up
4. Repeat step 2.

IMPORTANT:

1. Table positioning will alternate on 1 to 1.8 second intervals until the top returns to level.
2. Refer to Section 12 for adjustment procedures.

Principles of "BHYD" Operation

Refer to Hydraulic System Schematic P-134469-303 at end of this section for graphic information on hydraulic operation for the Amsco™ 3085 SP™ table

NOTE: "BHYD" = Bieri Hydraulic system.

There are 10 hydraulic cylinders in the BHYD system which allow for multiple articulations of the table. Left and right tilt require one cylinder. Leg up and down requires two cylinders. Column raise and lower requires one cylinder. Back raise and lower requires two cylinders. To obtain the level compensating the floor locks require three hydraulic cylinders. Articulations such as flex and Trendelenburg require the use of multiple cylinders, therefore requiring a series of directional and flow control valves.

The leg cylinder is protected by the use of an internal flow fuse valve. If a hydraulic line failure occurs, the flow fuse valve inside the cylinder will act as a check valve and prevent sudden falling of the table section.

The BHYD system incorporates six lowering brake check valves that act as fluid pilots for lowering and ports of restriction when actuated. Five three-position directional valves are used to select the particular articulation. Four two-position directional valves are used to control fluid flow for articulations involving the back seat section cylinders. One start/stop valve is used to control all articulations.

The BHYD 3085 SP Table is powered by an electrohydraulic system utilizing a special, high-efficiency gear pump that is driven by a 24 VDC motor. The pump is rated at 0.25 gallons per minute (0.62 lpm) and has a 1820 psi capacity. The system pressure-control valve reduces the operating pressure to 1750 psi (+50 psi, -25 psi). There is a manual foot pump for table operation in the event of power loss to the 24 VDC motor.

The hydraulic fluid used in the 3085 BHYD system is filtered by two 10-micron filters at the output of the electric and manual pumps.

The BHYD system utilizes a special purpose valve, start/stop valve, S-13. Its function is to release system pressure when not in use, giving smooth start and stop operation. The S-13 valve is de-energized and the hydraulic fluid is diverted back to the reservoir.

NOTE: All articulations require either the Hydraulic Pump and Motor to be running and producing necessary pressure or the use of the manual foot pump.

Electrical operation of the hydraulic system varies between hand control and auxiliary control operation.

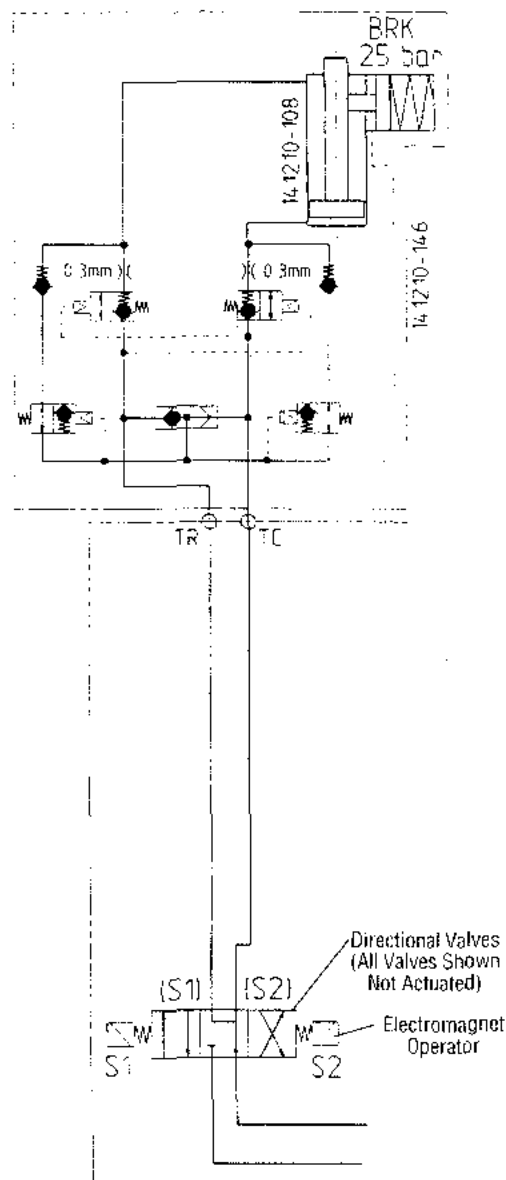


Figure 10-1. Side Tilt

Table Articulation/ Operation

» Side Tilt

Refer to Figure 10-1 and Hydraulic System Schematic (P-134469-303).

The side tilt articulations involve the use of one mechanically-locking hydraulic cylinder, two lowering brake check valves, one three-position directional valve (S-1 and S-2) and one start/stop valve (S-13).

Left side tilt is accomplished when solenoids S-1 and S-13 are energized. Fluid is directed through the S-1 valve to the lowering brake check valve. At this point fluid is sent in two directions. One direction allows for fluid to pass through a check valve and straight to the cylinder. The second direction is diverted off to act as a pilot for the return line restrictor. Fluid from the cylinder is now allowed to flow through the return line check valve, the restriction orifice and S-1 back to the reservoir.

Right-side tilt is accomplished in the same manner as the left side (outlined above), but uses solenoids S-2 and S-13 instead.

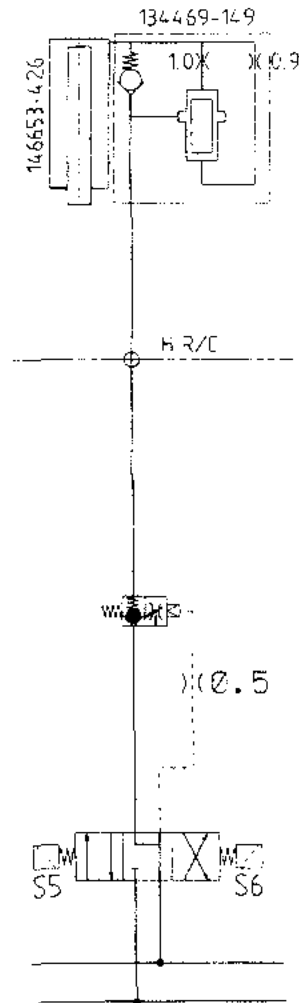


Figure 10-2. Column Raise/Lower

» **Column Raise/Lower** Refer to Figure 10-2 and Hydraulic System Schematic (P-134469-303).

Raising and lowering of the tabletop involves the use of one cylinder, one three-position directional valve (S-5 and S-6), one lowering brake check valve and one start/stop valve (S-13). A variable orifice restrictor is added to the system at the inlet/outlet of the raise/lower cylinder. This device is used to assist speed control and to compensate for varying tabletop loads.

The tabletop is raised when S-5 and S-13 are energized. Fluid is directed to the lowering brake check valve where it passes through the valve and through the variable orifice restrictor to the lift cylinder and causes the tabletop to rise.

The tabletop is lowered when S-6 and S-13 are energized. Fluid is directed to the lowering brake check valve to actuate the return line restrictor, to control the lowering speed, and unseats the pilot check valve. Fluid from the cylinder passes through the variable orifice, back to S-6 and on to the return port of the reservoir.

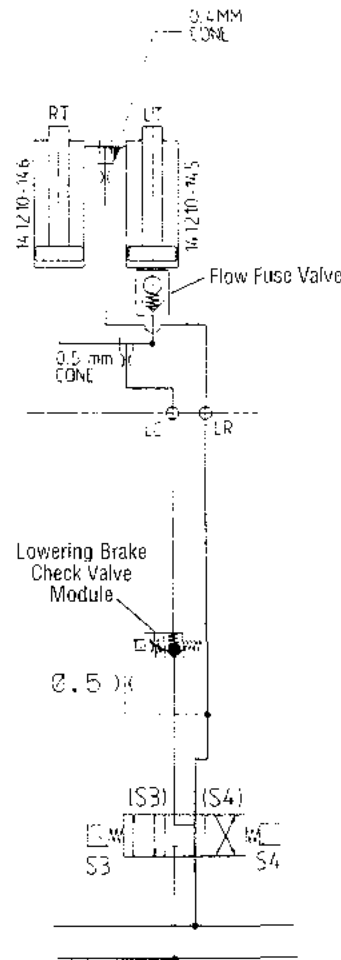


Figure 10-3. Leg Up and Down

» Leg Up and Down

Refer to Figure 10-3 and Hydraulic System Schematic (P-134469-303).

The leg up and down articulations require the use of two hydraulic cylinders, two lowering brake check valves, one three-position directional valve (S-3 and S4) and one start/stop valve (S-13).

Leg up is accomplished when solenoids S-3 and S-13 are energized. Fluid is directed through the S-3 valve to the lowering brake check valve. At this point fluid is directed two directions.

In one direction the fluid flows to the return line restrictor and actuates it to control the speed of the articulation. The second fluid direction unseats the holding check valve and allows fluid to flow to both of the cylinders. Return fluid from the cylinders comes back to the lowering brake check valve and passes through the now activated restrictor port to the S-3 valve and back to the reservoir.

Leg down is accomplished when solenoids S-4 and S-13 are energized. Fluid is directed through the S-4 valve to the lowering brake check valve. Fluid is then directed in two directions. In one direction the fluid actuates the return line restrictor to control the articulation speed, and unseats the holding check valve. The second direction allows fluid to pass through an unrestricted port and on to the cylinders causing them to retract. The return fluid from the cylinders is directed back to the lowering brake check valve. The fluid passes the unseated check valve to the S-4 valve and back to the reservoir.

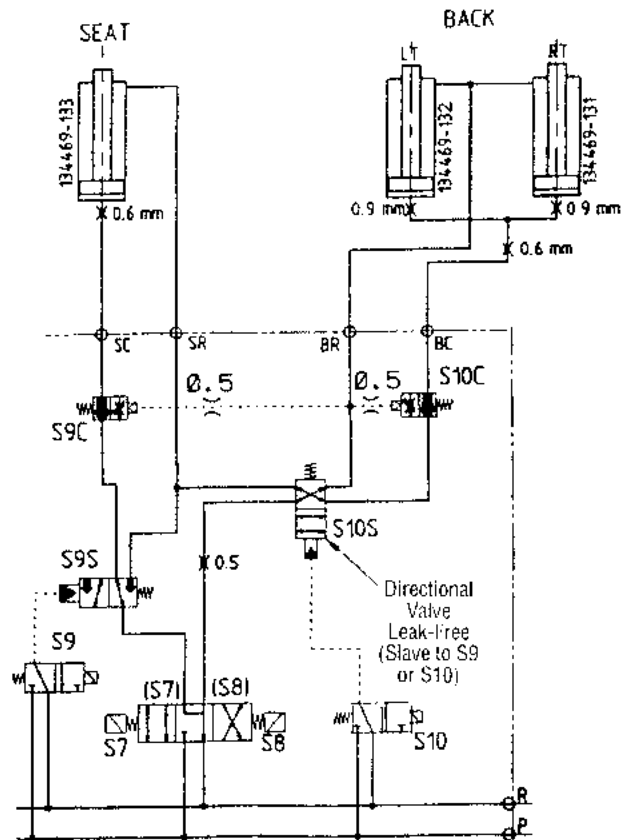


Figure 10-4. Flex/Reflex, Trendelenburg/Reverse Trendelenburg, and Back Up/Down

» **Flex/Reflex** Refer to Figure 10-4.

Flexing and Reflexing the tabletop requires the use of one three-position directional valve (S-7 and S-8), two lowering brake check valves, two position directional valves (S-9S and S-10S), one start/stop valve (S-13), two back cylinders and one seat cylinder.

The Flex articulation is accomplished by energizing the S-8 solenoid valve, allowing fluid to flow through the three-position directional valve. The fluid then flows to one lowering brake check valve and passes through its pilot check then on to the back cylinder two-position directional valve (S-10S).

NOTE: S-9 and S-10 solenoids are not energized during this articulation.

Fluid passes through the two-position directional (S-10S) valve and

branches to the retract side of the back cylinders and also to the second lowering brake check valve where it's pilot check is unseated and return line restrictor is actuated. Fluid leaving the back section cylinders passes through the two-position directional valve (S-10S) to the retract side of the seat cylinder. Having piloted the check valve, the fluid in the seat section is allowed to flow through the two-position directional valve (S-9S), the lowering brake check valve, the S-8 valve and back to the reservoir.

The Reflex articulation is accomplished by energizing the S-7 and S-13 solenoid valves allowing fluid flow through the three-position directional valve. The fluid then flows to one lowering brake check valve and passes through its pilot check and on to the seat cylinder two-position directional valve (S-9S) and to the extend side of the seat cylinder.

NOTE: S-9 and S-10 solenoids are not energized during this articulation.

Fluid from the seat cylinder is directed to the second two-position directional valve (S-10S) where it passes through it to the back cylinder extended ports. Fluid exiting the back section branches. One branch goes to the second lowering brake valve to pilot the check and to actuate the return line restrictor. The second branch of fluid exiting the back section cylinders passes through the two-position directional valve (S-10S), through the now piloted lowering brake check valve, through the S-7 valve and back to the reservoir.

» Trendelenburg/Reverse Trendelenburg

Refer to Figure 10-4.

These articulations require the use of one three-position directional valve (S-7 and S-8), three two-position directional valves (S-9S and S-10S), (one electrical S-10), two lowering brake check valves, one start/stop valve (S-13), two back cylinders and the seat cylinder.

The Trendelenburg articulation is accomplished by energizing the S-7, S-10, and S-13 solenoid valves.

NOTE: Energizing the S-10 solenoid introduces fluid pilot pressure to S-10S two-position directional valve, causing it to actuate.

Fluid flows through the S-7 valve to the first lowering brake check valve. The fluid unseats the check and continues to flow to the two-position directional valve (S-9S), passing through it to the seat cylinder. Fluid leaving the seat cylinder is directed to the second two-position directional valve (S-10S) which is now in its actuated position state due to the energizing of S-10. Fluid passes through the second two-position directional valve (S-10S) to the retract side of the back cylinders and also branches off to actuate the return line restrictor and pilot the check valve in the lowering brake check valve. This allows fluid exiting the back cylinders to flow through the two-position directional valve (S-10S), the piloted lowering brake check valve, the S-7 valve and back to the reservoir.

The Reverse Trendelenburg articulation is accomplished by energizing the S-8, S-10, and S-13 solenoid valves.

NOTE: Energizing the S-10 solenoid introduces fluid pilot pressure to the S-10S two-position directional valve, causing it to actuate.

Fluid flows through the S-8 valve to the first lowering brake check valve. The fluid unseats the check and continues to flow through the two-position directional valve (S-10S), which is now in its actuated position due to the energizing of S-10, to the extend side of the back cylinders. Fluid leaving the back cylinders branches to the second lowering brake check valve to pilot it and to actuate the return line restrictor. The second branch passes through the two-position directional valve (S-10S) to the retract side of the seat cylinder. Fluid leaving the seat cylinder passes through the two-position directional valve (S-9S), through the now piloted check and restricting orifice in the lowering brake check valve, through the S-8 valve and back to the reservoir.

» **Back Up/Down** Refer to Figure 10-4.

The Back Up and Back Down functions require the use of one three-position directional valve (S-7 and S-8), three two-positioned directional valves (S-9S and S10S), (one electric, S-9), two lowering brake check valves, one start/stop valve (S-13) and two back cylinders.

The Back Up articulation is accomplished by energizing the S-7, S-9 and S-13 solenoid valves.

NOTE: *Energizing the S-9 solenoid introduces fluid pilot pressure to the S-9S two-position directional valve, causing it to actuate.*

Energizing the S-7 and S-13 solenoids allows fluid to flow through the check valve on the first lowering brake check valve and to the two-position directional valve (S-9S). Fluid exits this valve and passes through the second two-position directional valve (S-10S) to the back cylinder extend ports. Fluid leaving the back cylinders branches to the second lowering brake check valve to unseat its pilot check and to actuate the return line restrictor. This allows fluid flowing from the other branch to pass through the two-position directional valve (S-10S), the now piloted lowering brake check valve, through S-7 and back to the reservoir.

The back Down articulation is accomplished by energizing the S-8, S-9, and S-13 solenoids.

NOTE: *Energizing the S-9 solenoid introduces fluid pilot pressure to the S-9S two-position directional valve, causing it to actuate.*

Energizing the S-8 and S-13 solenoids allows fluid to flow through the check valve on the first lowering brake check valve, through the two-position directional valve (S-10S) where it branches to the retract ports on the back cylinders and to the second lowering brake check valve to pilot the check valve and to actuate the return line restrictor. Fluid leaving the Back cylinders flows through the two-position directional valve (S-10S) to the second two-position directional valve (S9S), through it to the now piloted lowering check, through S-8 and back to the reservoir.

» **Floor Lock: Lock and Unlock** Refer to Figure 10-5.

The floor lock operation requires the use of one three-position directional valve (S-11 and S-12), one start/stop valve (S-13), three flow control restrictors and three floor lock cylinders. Because the floor lock system relies on a mechanical over-centering method to lock the floor locks, check valves are not required for this hydraulic circuit.

The Floor Lock function is accomplished by energizing the S-12 and S-13 solenoid valves. This allows fluid to flow through the S-12 valve to the restrictors on the extend ports of each cylinder. Fluid flow is restricted as its passed on to the cylinders, controlling the extend rate. Fluid leaving the cylinders returns back to the S-12 solenoid back to the reservoir.

The Floor Unlock function is accomplished by energizing the S-11 and S-13 solenoid valves. This allows fluid to flow through the S-11 valve to the retract ports of the floor lock cylinders. Fluid exiting the cylinders passes through the flow control restrictors back to the S-11 valve and on to the reservoir.

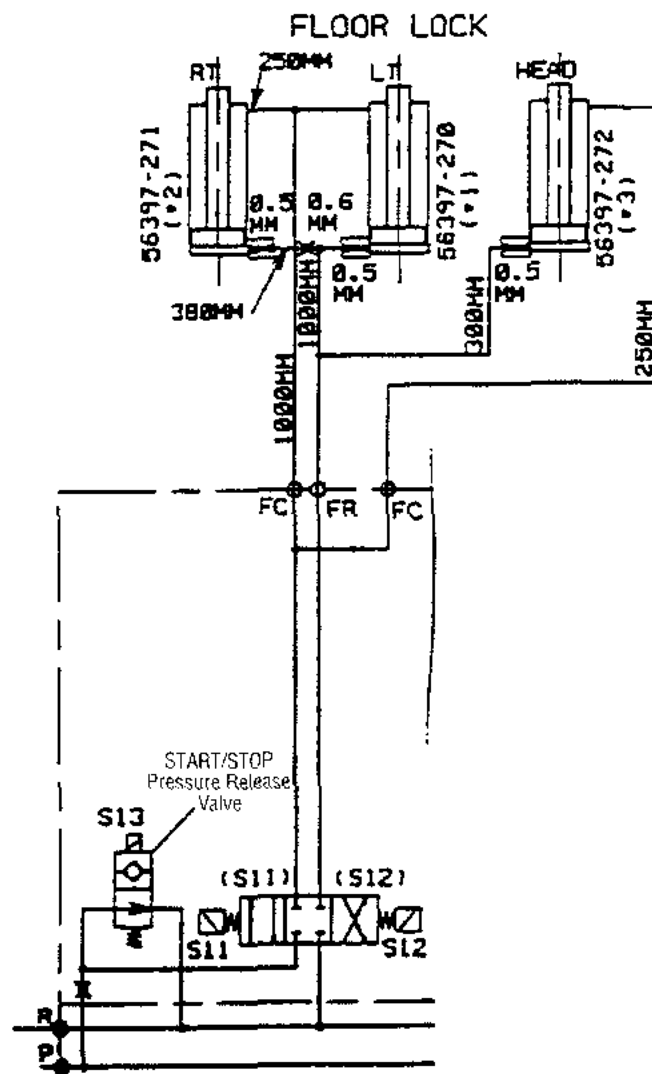


Figure 10-5. Floor Lock: Lock and Unlock

Table 10-1. Hydraulic System Schematic

Schematic, Hydraulic System - P-134469-303 (6-18-96)

Sheet 1 of 1

System Description

⚠ CAUTION: Static electricity can damage microprocessor controls. Indiscriminate probing of circuits or improper connections may result in immediate or delayed electrical failure. If the electronics are to be accessed, use a personal grounding device. Exercise care in all activities involving the electronic circuitry.

The Amsco[®] 3085 SPT[™] Surgical Table control system is designed for maximum reliability and includes adequate system redundancy for almost any circumstance. The control system utilizes microprocessor technology to control the hydraulic pump and solenoid valves. The primary control system consists of a "master" and a "slave" computer. A secondary and separate override control system allows operation of basic table functions should the primary microprocessor system become inoperative.

The master computer is located on the table column, while the slave computer is located in the hand control. Communication between the two is through a coiled cord (RS232 format). The master computer selects which outputs are to be actuated based on inputs from the hand control, foot control (optional), and table sensors. An Intel 8032 microcontroller is the heart of the master computer, with software stored on a 27C256 EPROM. Solenoid outputs are generated through an 8255, buffered with open-collector drivers. A watchdog timer and appropriate software monitor input/output signals to ensure graceful (instant) recovery should the I/O ports become configured in an erroneous state. Current sensors prevent the solenoids from being turned on by improper signals. Input isolation is also provided for the seat, raise, column and floor-lock limit switches. Input comparators indicate low-battery conditions, first through an LED on the hand control and, more specifically, on LEDs located on the table-control PC board mounted under the shroud.

The slave computer provides user inputs (from touch-pad switches) to the master computer. It also receives feedback signals and turns on the proper status LEDs. An Intel 80C31 microcontroller is the heart of the slave computer with software stored on a 27C256 EPROM. The LED buffer inputs and touch-pad matrix strobe inputs are generated through an 8255. Like the master computer, a hardware watchdog timer and software routines ensure correct I/O port status. The use of microprocessors allows for complex control functions to be implemented with minimum hardware and through the use of a small, lightweight pendant control.

Simple yet reliable backup is provided by a secondary and separate override system which allows operation of basic table functions should the primary microprocessor system become inoperative. The override control assembly uses different and basic technology. It turns off microprocessor controls when actuated by opening all driver lines and actuating the function selected at the override switch PC board. It bypasses the solenoid power cut-back circuit and turns the pump motor and solenoids fully on.

Input lines are fused and include a line filter and transient protection. Input voltage-selector switches allow the table to be operated on 100, 120, 220 or 230/240 VAC, 50/60 Hz. A battery-powered table includes a 24-VDC, 24-AH rated battery for the pump motor. An integral battery charger requires 24 hours for 90% battery charge, 36 hours for 95%, and 48 hours for 100% charge. A minimum of 36 hours is recommended.

Principles of Operation

» Incoming Power

A line cord, fused in the table at F1 and F2 (6 amp at 120 VDC, 4 amp at 240 VAC) feeds 120 VDC (domestic units) to the line filter. The line filter supplies line voltage to the power transformer and each of two battery chargers (one charger if a line-powered table). Each charger is fused and the rating is based on line voltage.

» Power Control Assembly

This module is located in the table base and contains the control battery charger and the power-control PC board. This circuit board monitors and controls the following:

- Battery and battery chargers
- Actuation and protection of the hydraulic pump and solenoid
- Power-up and line-cord operation relays
- Power cut-back circuitry
- AC signal indicator for the line-cord LED on the hand control.

Jumpers on the circuit board identify whether it is battery or line-cord (electric) type.

The battery charger(s) supply 24 VDC to the control and to the motor batteries, provided the line cord is plugged in. Line-cord power is the **primary** power for battery tables. Battery voltage is monitored by the table control, through the hand control on power-up, and every 10 minutes thereafter. The table control sends a "charger off" signal to the power-control PC board to isolate the chargers and batteries, then monitors the battery voltage. If low voltage is sensed, the table control sends a low-battery signal to the low-battery LED on the hand control, as well as to the low-battery LED on the table control PC board.

Control power-up/power-down is generated on the power-control PC board via direct signals from the hand-control ON/OFF touch pads. These signals activate a latch relay on the power-control PC board which transfers the 24 VDC signal to the table control PC board. This latch relay CR3, which is multi-poled, also isolates the batteries from the table control to conserve battery life when the unit is off, and powers the delay circuit for motor and coil enable. The latch relay can also be set (turn power off) from the override switch PC board whenever any of the manual switches is activated.

The hydraulic pump motor is activated using either the table function switches on the hand control or the function switches on the override board. In either case, a low (DC ground) signal is fed to switching transistor Q6, which provides 24 VDC to motor. The control circuitry is protected from a locked or shorted pump motor by a current-monitoring circuit which opens the pump motor line when the current exceeds 25 amps. This circuit is automatically reset when the current drain is reduced or eliminated.

The hydraulic solenoid coils are also powered from the power-control PC board. The control circuitry is protected from shorted coils/components by a current-monitoring circuit. This circuit opens the solenoid voltage line when current exceeds 2.5 amps. The circuit is automatically reset when condition is corrected. A solenoid power-cut circuit is used by the control to save battery power. When the hand control is being used, the 24 VDC solenoid voltage is cut to approximately 8 to 13 volts after the coil is energized. This current is enough to hold the hydraulic plunger open once it has been initially energized. The feature is not used when any of the override switches is activated.

The AC power indicator, located on the hand control, is sensed on the power-control PC board. When the line cord is plugged in, the battery charger energizes opto-isolator(s) that transfer a DC ground to the table control PC board for processing, which turns on the hand control LED.

A control reset signal from the table-control PC board energizes a timing circuit on the power-control PC board to delay (microseconds) the pump motor and hydraulic solenoid coil operating voltage until all I/O ports can be set. This prevents any erroneous table articulation at power-up.

» **Table Control PC Board**

The table-control PC board (master computer) controls all table functions based on inputs from the hand control, foot control (optional) and table sensors. Communication with the hand control is through an RS232 format line.

The table-control PC board contains a DC-DC converter which reduces the 24 VDC from the power-control PC board to 5 VDC for use in this board and the hand control. Test points are on the board to monitor this voltage.

Battery voltages are monitored by comparators on the board. The circuit responds by indicating battery status to the hand control for display to the operator.

Floor-lock microswitch (two) signals are fed into the board, which responds by signaling the hand control to indicate floor-lock status and enabling hand-control table operation. If an unlock indication is sensed by the table-control PC board, the hand control is disabled.

Foot control signals are input directly into the board via opto-isolators. The particular table function is activated when a DC ground is applied to the appropriate pin. The table must be on and properly oriented for this option to work.

The AC ON signal from the power-control PC board is processed by this board and transmitted, via RS232, to the hand control for display.

Signals from the limit switches for stopping the seat, back and raise/lower cylinders are input directly into this board via opto-isolators. These switches will stop table movement prior to reaching a mechanical stop indicated by the hand control.

The I/O drivers provide a separate ground to each hydraulic solenoid coil when a table function is activated. The positive voltage, from the power-control PC board, is already prewired to each coil. All coil activation through the hand control is through this board.

When using the hand control, the motor ON signal is generated by the I/O driver board.

A watchdog timer monitors the transmit line from the table-control PC board to the hand control. This circuit is looking for a burst of information every 100 seconds. If not sensed, the CPU will attempt to reset prior to an automatic cutoff.

NOTE: A jumper is used at P29 to configure for battery-operated tables.

» Hand Control

The hand control houses the "slave" computer which controls all touch-pad switches (except ON and STOP/OFF) and all LED table-operation status indications.

Signals from the table function touch pads are acknowledged and transmitted, via an RS232 format line, to the table-control PC board which, in turn, activates the particular hydraulic solenoid. The LEDs next to the function touch pads indicate the operation status of the table as received from the "master" computer on the table-control PC board. The AC ON, BATTERY ON, and LOW BATTERY LED signals are generated directly from the power-control PC board.

A watchdog timer monitors the transmit line of the CPU for proper bursts of information. A CPU reset is generated if an error is detected.

The hand-control PC board is powered by +5 VDC from the DC-DC converter on the table-control PC board.

» Override Switch Board

All signals generated by the override switches are controlled by this board, i.e., all table-positioning and floor-lock switch signals. The hand control, table-control PC board, and most circuitry on the power-control PC board are bypassed when any override switch is energized. A 24-VDC power supply, either from the batteries or from the line cord, is necessary to operate the hydraulic solenoid coils. It is not needed for the hydraulic pump since a foot operated pump backs up this device.

When an override switch is energized, four multi-poled relays (CR1, CR2, CR3 and CR4) are energized, isolating the hydraulic solenoid coils from the table-control PC board and the hand control. Simultaneously, a DC ground signal is fed to the power-control PC board to turn on the hydraulic pump if possible (see note), and to turn off power to the hand control.

NOTE: If the line cord is plugged into the table or if motor-battery power is available (battery powered tables only), the hydraulic pump will come on. Otherwise, the control batteries are used along with the manual pump. The control batteries do not have the capability to run the hydraulic pump.

The second pole of the override switch applies a DC ground to the proper hydraulic coil for activation. Circuitry on the board prevents more than one switch being acknowledged.

An RC (resistive-capacitive) circuit exists on the CR3 and CR4 relay coils to time-delay-off these two relay coils if an override articulation has been selected. This is necessary for proper operation of the internal valves of the hydraulic manifold.

Troubleshooting

Refer to the Troubleshooting Chart (Table 11-1) for a sequence of steps to use to identify and correct most electrical problems encountered. Also refer to the electrical schematics in Section 11 when using the Troubleshooting Chart.

Refer to Section 10, Hydraulic System, when the cause of the problem appears to be hydraulic.

Refer to Table 11-2, Battery Diagnostics, to determine proper battery voltages (battery-operated tables only).

» Electrical Troubleshooting Guidelines

CAUTION: Isolate the coil and/or pump motor from the control by disconnecting the wires on the motor terminal board, or slip the wires off the solenoid coil.

- Before replacing any PC boards or other components suspected of being defective, make sure all cable plugs and fully inserted into their respective jacks.
- Make sure all cable pins are installed and locked into place on the plug(s).
- When making any DC voltage measurements, reference the DC ground, **not** the chassis ground. (These two points are isolated from each other.)
- The pump motor and/or the hydraulic solenoids can be checked by applying **24 VDC** only directly to the component.
- To completely disconnect power to the table, the line cord as well as the batteries **must** be disconnected.
- When resoldering or replacing any of the table or floor-lock microswitches, isolate the control by disconnecting its associated plug.

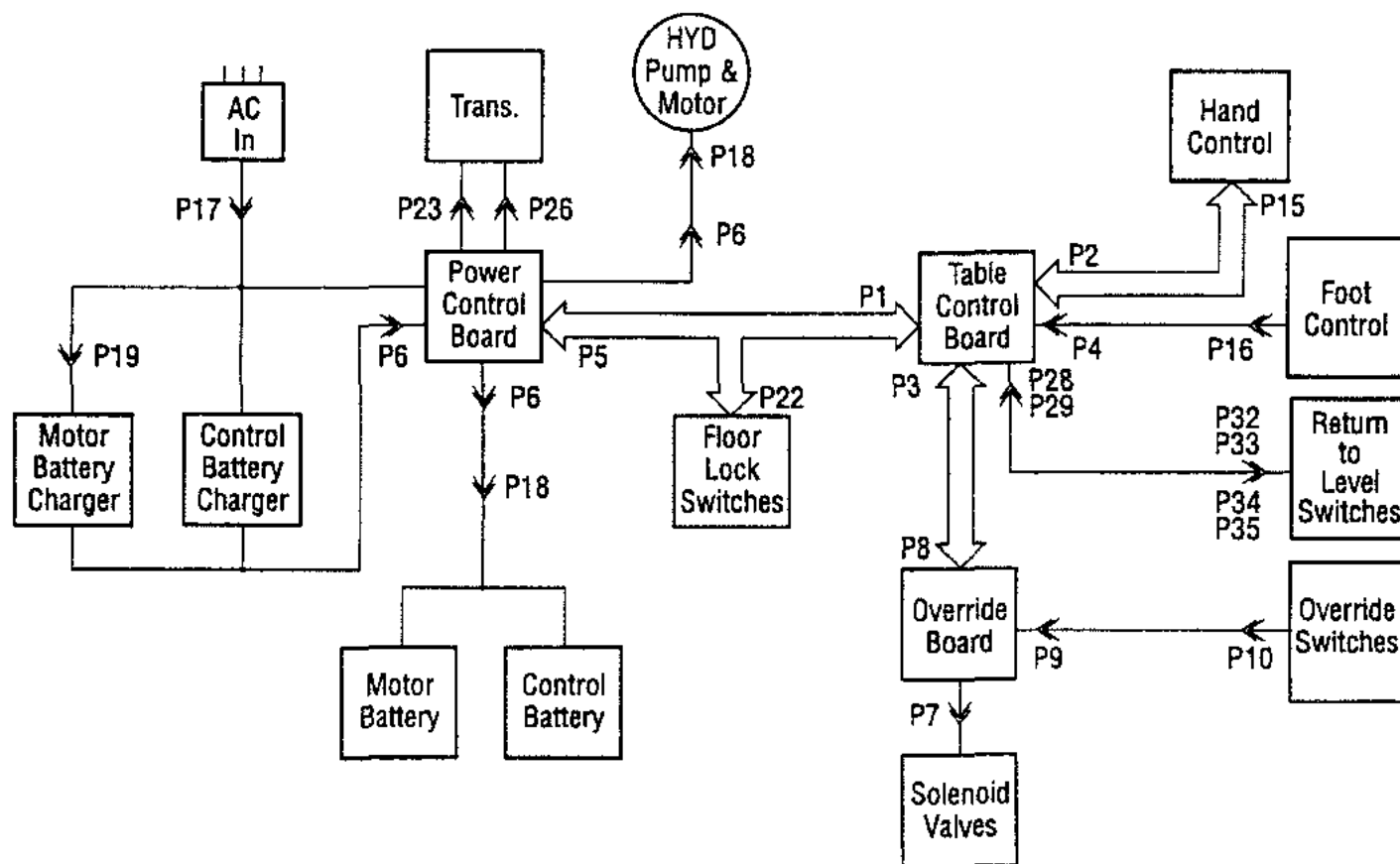


Figure 11-1. Amsco 3085 SP Table Block Diagram*

* See electrical schematics for more detailed information.

Table 11-1. Electrical System Troubleshooting

Problem	Symptom/Cause	Remedy	Where to Find
1. Table cannot be turned on by hand control	1. Check operation using override switches	1) Proceed to Problem 2 if no operation	--
	2. Listen for operation of CR3 in power-control assembly when ON/OFF switches are activated	1) Check continuity of ON circuit from hand control to power control assembly. Replace hand control or repair open wire. 2) Check for 24 VDC on P1-6 and P1-9. Replace power control PC board if no voltage.	System Schematic Section 11
	3. Check for 5 VDC on table control PC board.	1) Check P5/P1 cable continuity. Repair or replace cable. 2) Replace table control PC board.	System Schematic Section 11
2. No override switch operation with line cord plugged in	1. Check F1 and F2 line fuses.	1) Replace fuses	Section 8
	2. Check CR1.	1) Reset circuit breaker	Section 8
	3. Check for 24 VDC across P6-2 and P6-13.	1) Replace power control PC board.	Section 12
	4. Check for 24 VDC at hydraulic pump motor terminal board with a switch activated.	1) Repair or replace pump motor if voltage is present	Figure 14-26
	5. Check for "E motor on signal" at P5-15 with a switch activated. Should be at DC ground potential.	1) Replace power control PC board if signal is present	Section 12
	6. Check for 24 VDC solenoid coil voltage at P5-1	1) Replace power control PC board if no voltage is present	Section 12
	7. Check P8 and P5 for continuity or loose plugs	1) Repair or replace cable.	--
	8. Check override switches for continuity	1) Replace override switch board	Section 12
	9. Check P9/P10 cable for continuity or loose plugs or pins	1) Repair or replace cable. 2) Replace override control board	Section 12
3. No override switch operation when line cord is not plugged in.	1. Check for operation when line cord is plugged in	1) See Problem 2	--
	2. Check control and motor battery voltages.	1) Charge batteries by plugging the line cord 2) Proceed to Problem 4	Section 6
	3. Check the wiring and cable plugs between batteries and power control PC board	1) Repair cable. 2) Replace power control PC board.	Section 6

Table 11-1. Electrical System Troubleshooting (continued)

Problem	Symptom/Cause	Remedy	Where to Find
4. Batteries will not charge, low battery or depleted battery signal on hand control	1. Check line fuses F1 and F2.	1) Replace fuse(s).	Section 8
	2. Check the charger line fuses F3 and F4 (battery table only)	1) Replace fuse(s)	Section 8
	3. Check the charger circuit breakers CB 3 (control), CB4 (motor) and CB2 (motor battery)	1) Reset circuit breaker	Section 8
	4. Check for +24 VDC at charger output. For isolation, disconnect the battery prior to measuring.	1) Replace battery charger.	Section 12
	5. Check all cables between the batteries and the charger	1) Replace batteries 2) Replace power control PC board.	Section 12
	6. Check for charger voltage on wires to the battery. For isolation, disconnect the battery prior to measuring	1) Replace power control PC board	Section 12
5. No "AC ON" light on hand control when line cord is plugged in.	1. Check for battery charger voltage(s)	1) See Problem 4	--
	2. Check for 24 VAC (transformer secondary) across P6-9 and P6-10)	1) Reset CB1. 2) Replace transformer. 3) Replace power control PC board.	Section 12
	3. Check for 0 VDC (DC ground potential) at P5-6 or P1-21.	1) Replace power-control PC board.	Section 12
	4. Check P1/P5 cable for continuity	1) Replace table-control PC board	Section 12
6. "AC ON" light will not go off when line cord is unplugged	1. Disconnect wire #69 at P5-6 or P1-21.	1) If light goes off, replace power control PC board. 2) If light stays on, replace table control PC board.	Section 12
7. Floor-lock "LOCK" light will not come on.	1. Check LS1 and LS2 switch adjustment on back locking legs.	1) Adjust switches	Section 12
	2. Check the solder joints at microswitch terminals.	1) Resolder as necessary	--
	3. Carefully ground (DC ground) wire #82 at P27-1 to simulate that floor locks are locked	1) Check for continuity between P1-20 and P27-1	System Schematic Section 11
	4. Check at P1-20	1) Replace the table control PC board if "LOCK" light did not come on.	Section 12

Table 11-1. Electrical Troubleshooting (continued)

Problem	Symptom/Cause	Remedy	Where to Find
8. Table will not raise with hand control, pump runs.	1. Check LS5 (raise) limit switch is energized if unit is at other than full height	1) Adjust or replace switch assembly	Section 12
9. No flex or reverse Trendelenberg w/hand control	1. Seat limit switch (LS3) is defective, stuck or out of adjustment	1) Adjust or replace switch assembly. 2) Replace rubber boot	Section 12
10. No flex or Trendelenberg w/hand control	1. Back limit switch (LS4) shorted, stuck closed, or out of adjustment	1) Adjust or replace switch assembly. 2) Replace rubber boot.	Section 12
11. Green "ON" LED flashing.	1. Optional foot control switch was actuated when hand control switched ON, control logic error disables foot control functions	1) Turn hand control OFF, then ON to reset controls	--
	2. Faulty foot control - foot control function is disabled	1) Replace foot control	--
12. Failure of R/L.			Refer to Electrical Schematic Section 11
a. Return to level actuated no motion	1. P28 & P29 connectors. 2. P31-32 connectors 3. P33, 34, 35, 36 connectors	1) Assure all are secure	Refer to Electrical Schematic Section 11
b. One section continues past level	1. Short in level switch.	1) Test with ohmmeter. Replace if necessary	Refer to Electrical Schematic Section 11
c. One section not at level but does not move to level.	1. Open level switch	1) Test with ohmmeter. Replace if necessary	Refer to Electrical Schematic Section 11

NOTE (for items 12.b. and c.): If leg section; entire assembly P-136807-731 must be replaced and readjusted as described in Section 12.

Table 11-2. Battery Diagnostics

Battery	Low Battery LED Status	
	On	Flashing
Motor	22.7 VDC	21.6 VDC
Control	23.6 VDC	22.7 VDC

Table 11-3. Hand Control Diagnostics

NOTE: For troubleshooting of the optional HERMES-Ready system, refer to the HERMES Operating Room Control Center Operating and Maintenance Manual, provided with the HERMES System.

Indication	Condition	Corrective Action
Control ON - Green AC LED and red BATTERY LED flashing.	AC power connected, low or discharged batteries	Charge batteries
Control ON - Green BATTERY LED on and red BATTERY LED flashing	Battery Operation - Low or discharged batteries - If discharged, control shutdown after 3-1/2 min. when table in use, or after 30 sec. if condition exists at power-up	Charge batteries
Control ON - Green BATTERY LED (only) on when table plugged into AC receptacle.	Battery level acceptable, faulty battery charger or power circuit.	Check AC power cord - replace if necessary. Check fuses F1 and F2 - replace if necessary. Reset circuit breaker CB-3. Reset circuit breaker CB-4.
All green and red LEDs flashing.	No communication between table control and hand control.	Check hand control connection Replace hand control if necessary.
Green "ON" LED flashing.	Optional foot control switch was actuated when hand control switched ON - control logic error disables foot control functions Faulty foot control - foot control function is disabled	Turn hand control OFF - then ON to reset controls Replace foot control.
All LEDs go off	Hand control unplugged while table control ON - control automatically shuts off after one min. Line Powered Table, AC power off - control automatically shuts off six hours after last function selected. Battery Powered Table, floor locks off - control automatically shuts off 30 min. after last function selected Battery Powered Table, AC power off - control automatically shuts off 24 hours after last function selected.	Reconnect hand control. Reconnect AC power Activate floor locks Reconnect AC power
Green AC LED flashing	Faulty foot control - foot control function is disabled	Replace foot control

Electrical Schematics

The following electrical schematics should be used in conjunction with Table 11-1, Electrical System Troubleshooting, to understand the table's electrical system operation.

Table 11-4. Electrical System Schematics

- **P-755716-207 (Rev 0, 12-8-93) – Instructions, Cord Replacement for Foot Control**
Page 4 of 4
- **W-141210-126 – 3080/3085 Bieri Hydraulic System Schematic**
Sheet 1 of 3
Sheet 2 of 3
Sheet 3 of 3
- **P-141210-378 (Rev 3, 6-19-01) – 3080/3085 HERMES-Ready Bieri Hydraulics System Schematic**
Sheet 1 of 3
Sheet 2 of 3
Sheet 3 of 3
- **P-146653-761 (Rev. 13, 3-25-98) – Power Control Schematic**
Sheet 1 of 1
- **P-146653-764 (Rev. 15, 7-13-98) – Power Control Board Assembly**
Sheet 1 of 1
- **P-141210-127 (Rev. 4, 12-12-96) – Override Switch Schematic: Bieri Hydraulics**
Sheet 1 of 1
- **P-141210-139 (Rev. 3, 4-30-98) – Override Control Board Box Assembly**
Sheet 1 of 1
- **P-146655-473 (Rev. 15, 4-13-99) – Table Control Board Assembly**
Sheet 1 of 4
- **W-146655-473 (Rev. 15, 4-13-99) – Table Control Board Assembly**
Sheet 2 of 4
Sheet 3 of 4
- **P-141210-172 (Rev. 5, 4-27-95) – PC Board Detail - Hand Control Schematic**
Sheet 1 of 2

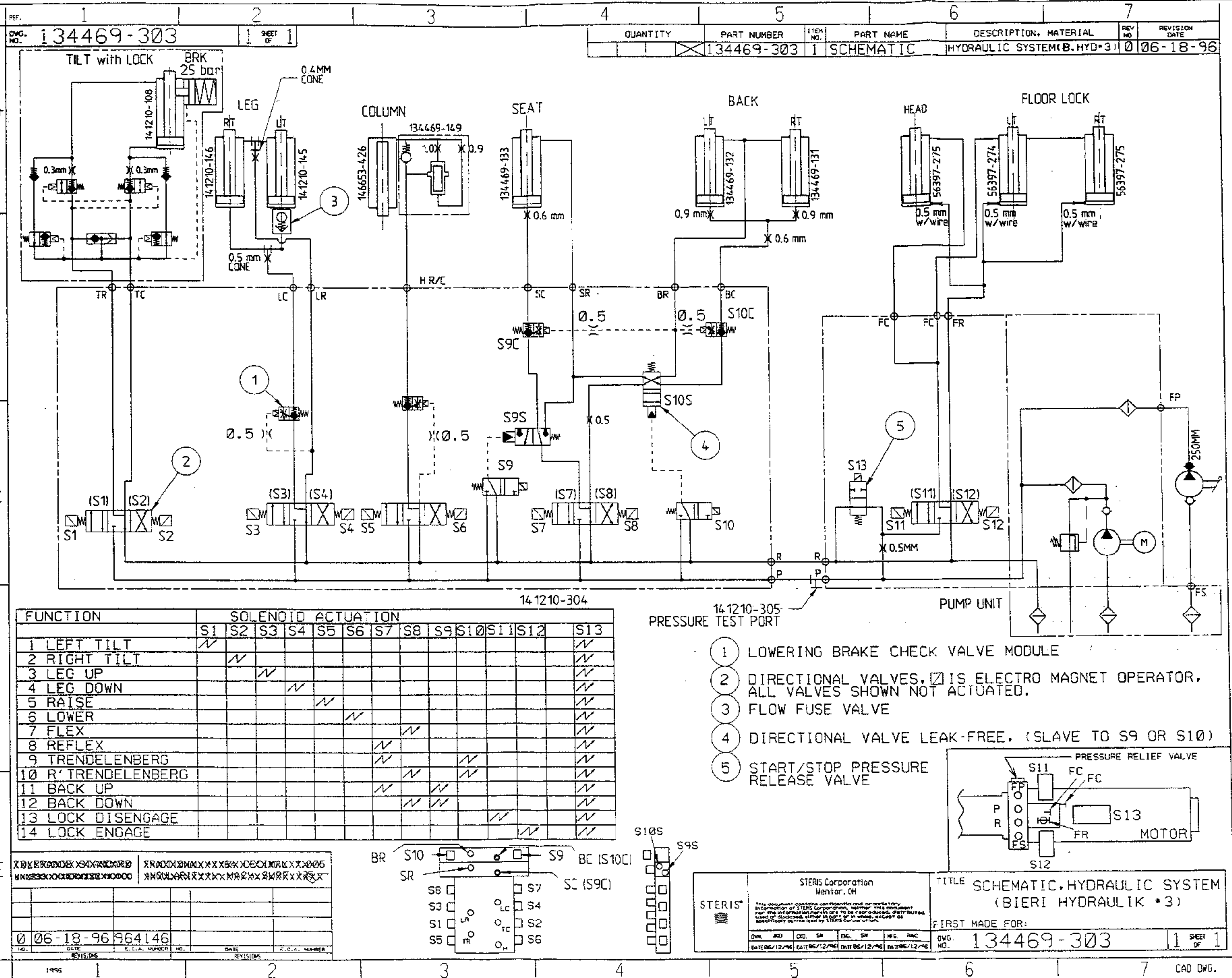
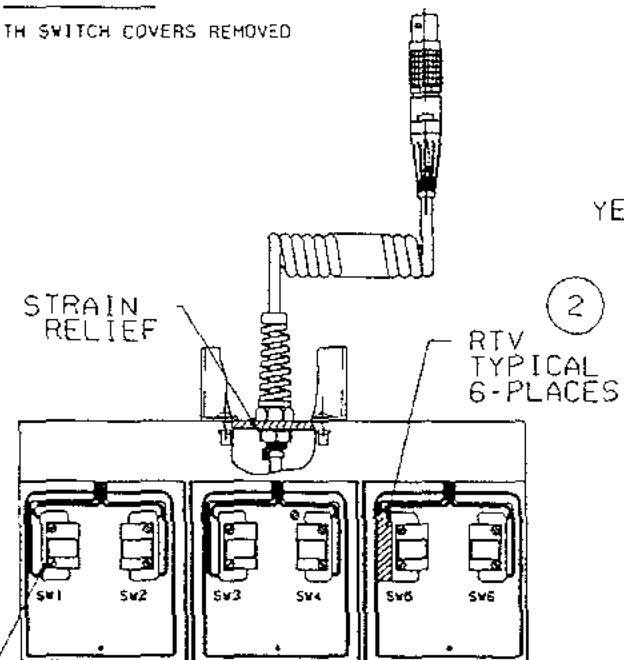
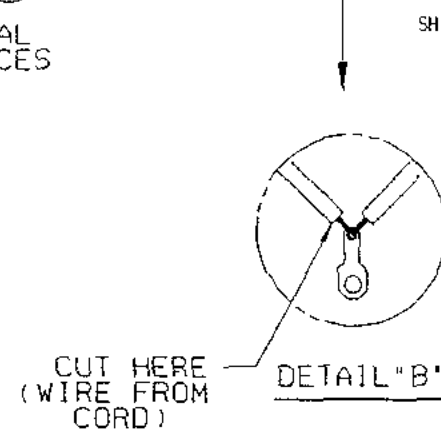
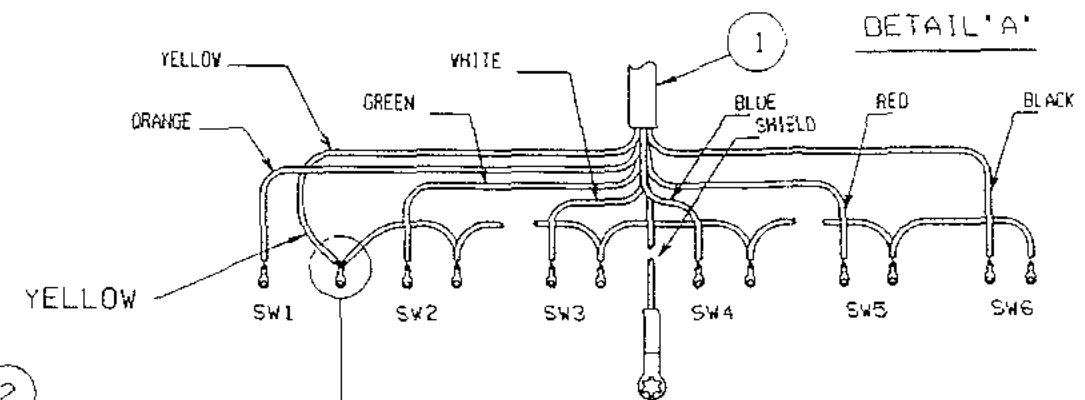


FIGURE 1
SHOWN WITH SWITCH COVERS REMOVED



SEE DETAIL 'A' FOR WIRE LOCATIONS



NOTE: DO NOT CUT JUMPER WIRE, CUT YELLOW WIRE FROM CORD!

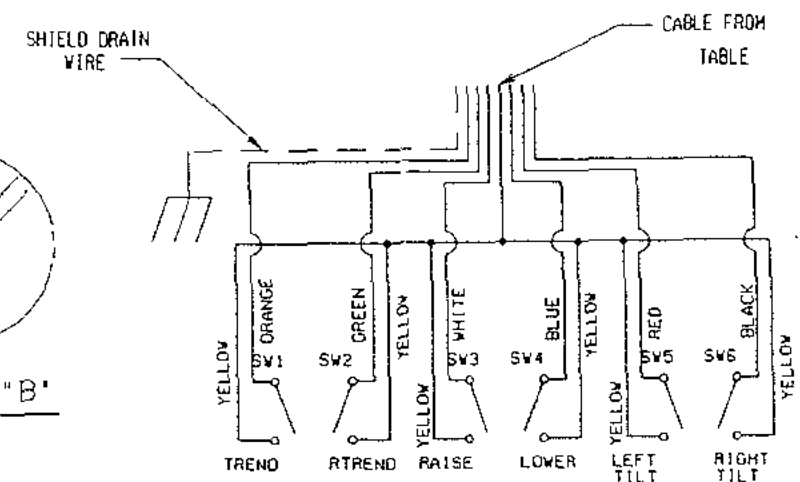
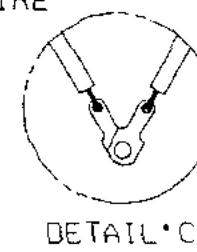


FIGURE 2
WIRING SCHEMATIC
(SWITCH CLOSES TO PERFORM FUNCTION)

INSTRUCTIONS, CORD
REPLACEMENT FOR
FOOT CONTROL

P/N 755716-207

PAGE 4 OF 4

REV. 0 DATE 12/08/93

[illegible]

NOTES:

1. FREE WIRE NUMBERS: 2,4,10,12,13,14,21,51,53,57, 61,68,83,94,95,96,97,98,99,123,131,132,133,134.
2. LAST WIRE NUMBER: 179
3. PLUGS USE P1 THRU P10, AND P15 THRU P30.

Dwg. No. W141210-126
Page 1 of 3

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P1-10>> FL UNLOCK OVERRIDE 92 115

P28-4>> 28 LS3 SEAT LIMIT SWITCH

P28-6>> 29 SEAT LIMIT SWITCH

P28-5>> 130 RAISE LIMIT SWITCH

P28-1>> 141 SEAT LEVEL SENSE

P28-3>> 142 LEG LEVEL SENSE

P28-2>> 143 BACK LEVEL SENSE

P29-6>> 144 TILT LEVEL SENSE

P29-4>> 31 LS4 BACK LIMIT SWITCH

P29-5>> 32

P29-2>> PROGRAM JUMPER
FOR BATTERY TABLE ONLY

P29-3>>

P2-8>> 124 P15-1 BLUE <<P14-8

P2-1>> 125 P15-2 DRN <<P14-7 HAND CONTROL

P2-4>> 126 P15-3 GRN <<P14-6 141210-208

P2-5>> 127 P15-4 WHT <<P14-5

P2-7>> 128 P15-5 BLK <<P14-4 141198-920

P2-6>> 129 P15-6 RED <<P14-3 EXPORT ONLY

16 33 <<P14-1

P15-CASE

P4-8>> 116 P16-1 WHT

P4-7>> 117 P16-2 BLUE

P4-5>> 118 P16-3 DRN

P4-4>> 119 P16-4 GRN

P4-3>> 120 P16-5 BLK

P4-6>> 121 P16-6 RED

P4-1>> 122 P16-7 YEL

33 <<P16-CASE

TABLE CONTROL
146655-481COMPONENTS MOUNTED
ON COLUMNFOOT CONTROL
136806-825FOOT CONTROL
141214-023
EUROPEAN
EXPORT ONLY

P3-30>> FLOOR LOCK SOL 87

P3-29>> LEG DOWN 60

P3-23>> FLOOR LOCK 65

P3-18>> LOWER 50

P3-1>> FLOOR UNLOCK SOL 88

P3-16>> START/STOP 58

P3-12>> SOL V. 67

P3-28>> TILT RIGHT 52

P3-19>> TILT LEFT 62

P3-21>> TREND/RTREND 54

P3-24>> -DC SUPPLY 148

P3-10>> FL LOCK OVERRIDE B-149

P3-7>> E STOP/OFF 150

P3-14>> E MOTOR ON 151

P3-15>> TREND/BACK UP/REFLEX 59

P3-20>> RTREND/BACK DOWN/FLEX 56

P3-27>> E SOL V. 152

P3-2>> BACK UP /BACK DOWN 63

P3-5>>

P3-26>> FLOOR UNLOCK 66

P3-4>> FL UNLOCK OVERRIDE 153

P3-9>> RAISE 64

P3-6>>

P3-22>> LEG UP 55

P3-3>> FL LOCK OVERRIDE 154

P3-8>> ABOVE LEVEL 145

P3-25>> BELOW LEVEL 146

P3-13>> SPARE 3

P3-17>> TABLE CONTROL BOX

P8-1>> SHIELD 147

P8-1>> OVERRIDE CONTROL BOX

P8-1>> TO FLOOR LOCK SOL, LOCK 87

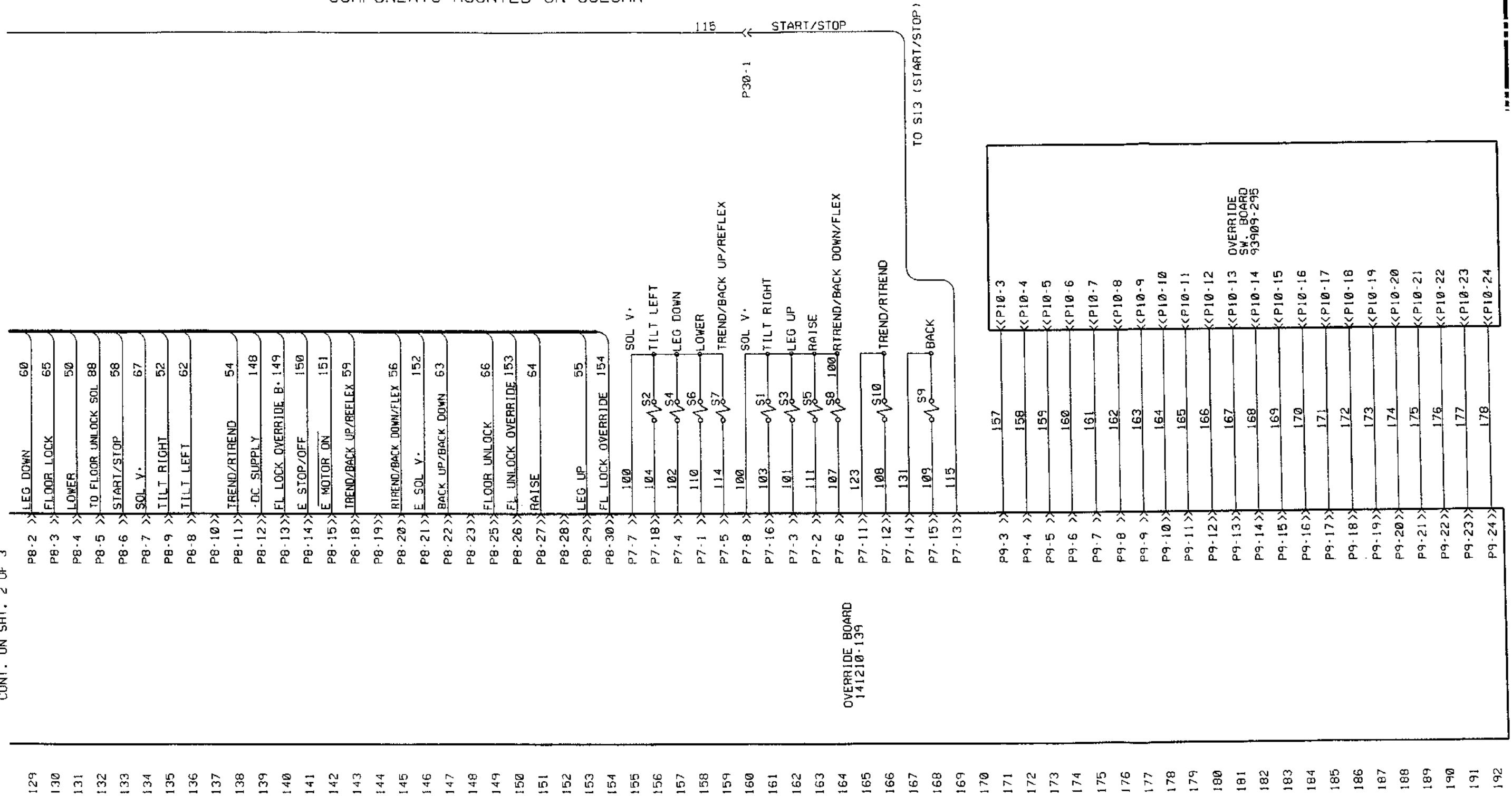
OVERRIDE BOARD

CONT. ON SHT. 3 OF 3

3080/3085 BIERI HYDRAULIC
SYSTEM SCHEMATICDwg. No. W141210-126
Page 2 of 3NOTE: SECTION IS LEVEL, BOTH SWITCHES
WHEN SECTION IS LEVEL, BOTH SWITCHES
A & B FOR THAT SECTION ARE OPEN.
CLOSURE INDICATES ORIENTATION NOTED.

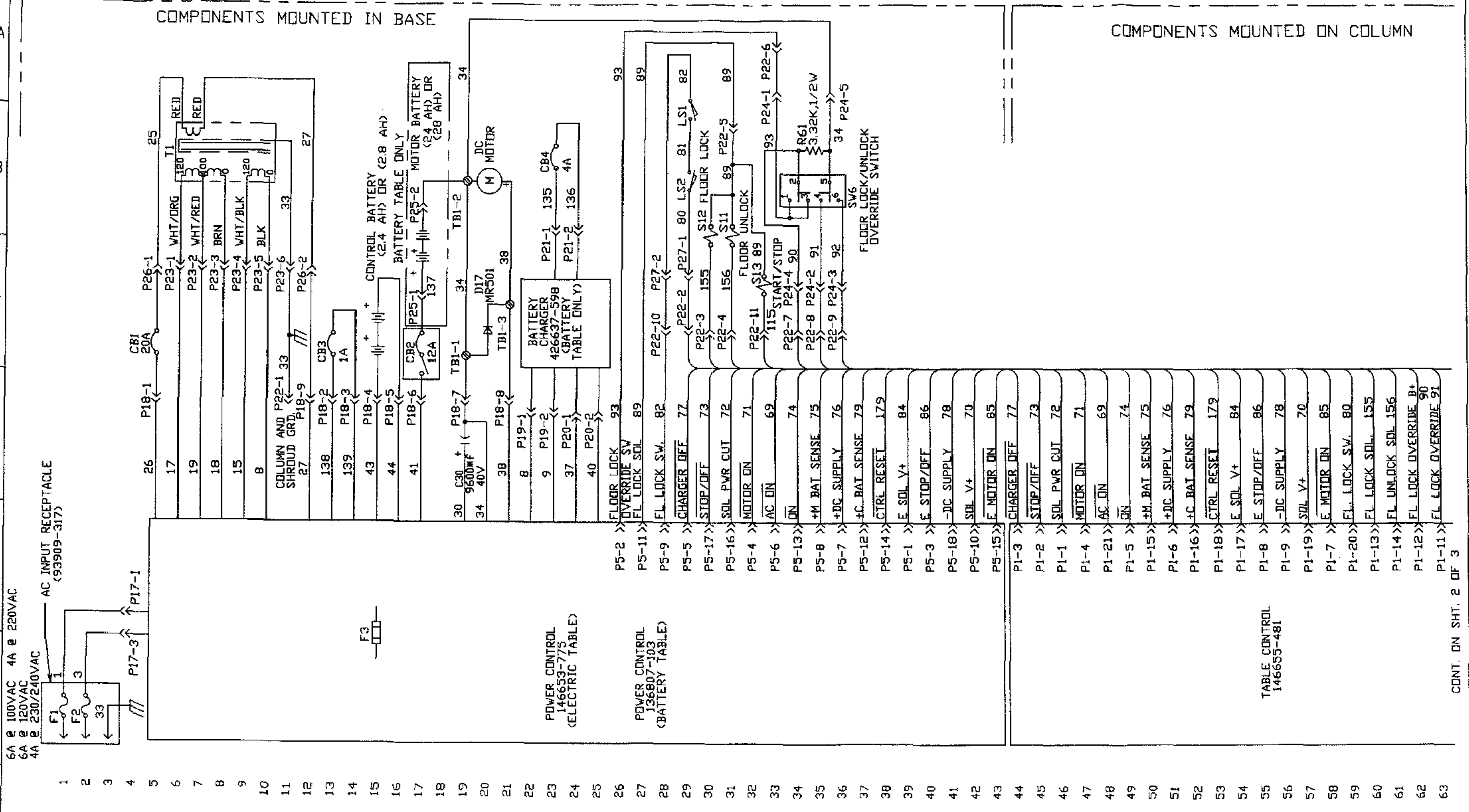
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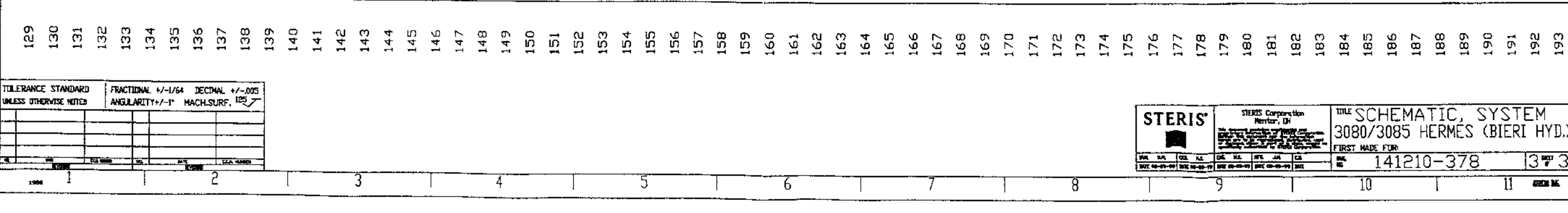
COMPONENTS MOUNTED ON COLUMN





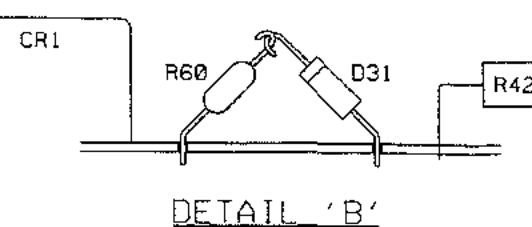
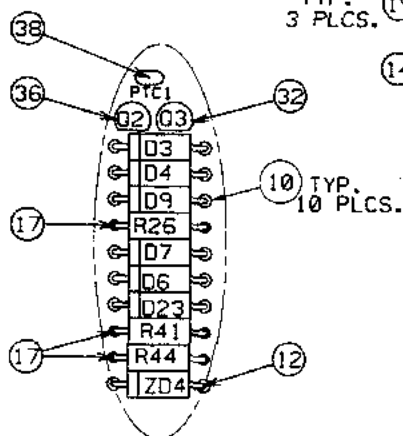
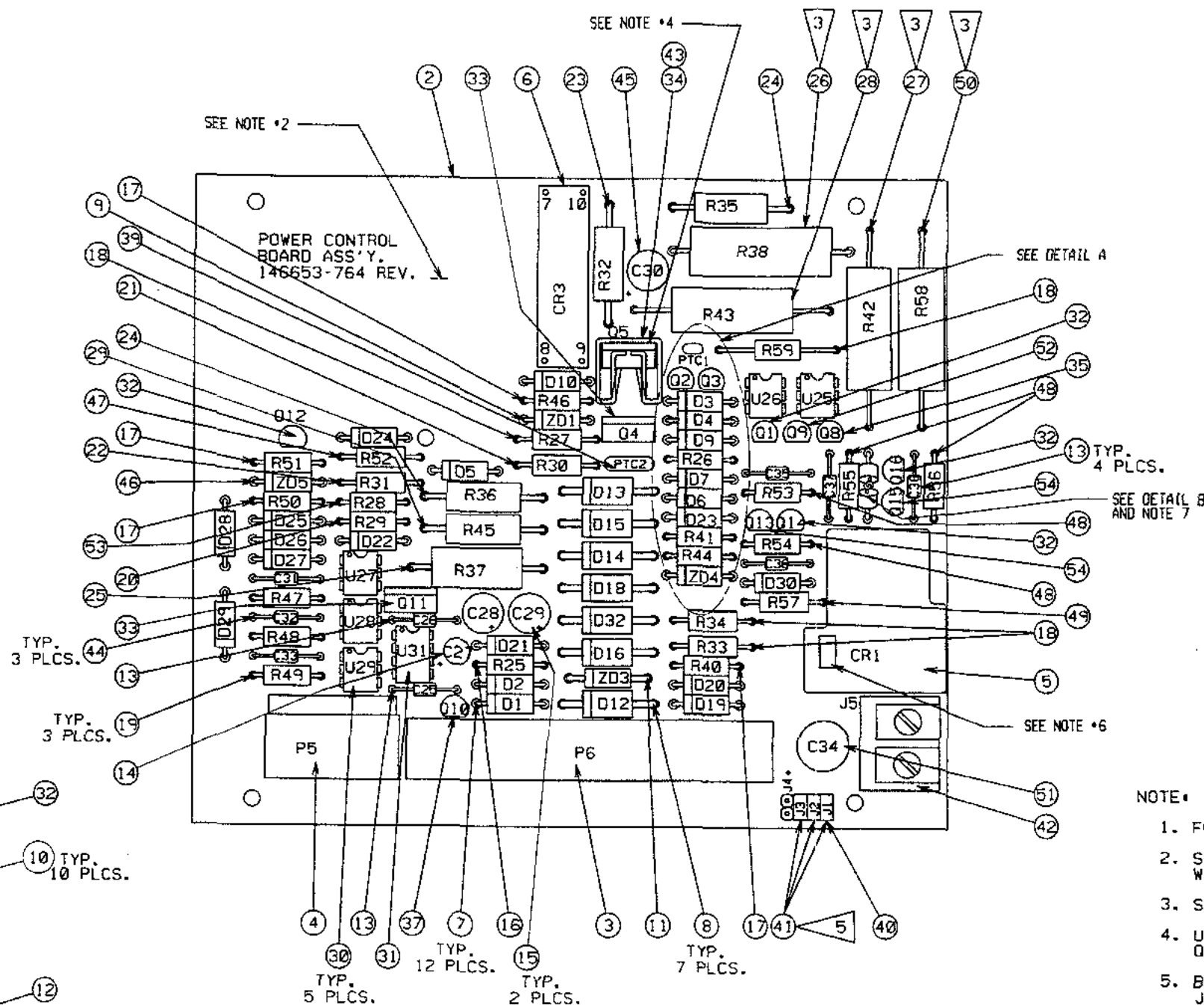
3080/3085 BIERI HYDRAULIC
SYSTEM SCHEMATIC

Dwg. No. W141210-126
Page 3 of 3





 STERIS®				STERIS Corporation Mentor, OH				TITLE SCHEMATIC, SYSTEM 3080/3085 HERMES (BIERI HYD.)			
				<small>This document contains the intellectual property of STERIS Corporation. It is the property of STERIS Corporation and is loaned to your organization for your use only. It is not to be distributed outside your organization. It is to be stored in a secure location. It is to be destroyed when no longer needed. It is to be returned to STERIS Corporation when no longer needed. It is to be kept confidential. It is to be handled in accordance with the STERIS Corporation Confidentiality Policy.</small>				FIRST MADE FOR:			
DATE 10-09-99	DATE 10-09-99	DATE 10-09-99	DATE 10-09-99	DATE 10-09-99	DATE 10-09-99	DATE 10-09-99	DATE 10-09-99	DATE 10-09-99	DATE 10-09-99	DATE 10-09-99	
ORG. NO.				DATE				NO.			
141210-378				141210-378				141210-378			



TOLERANCE STANDARD	FRACTIONAL 1/64	DECIMAL .005
UNLESS OTHERWISE NOTED	ANGULARITY .1" MACH. SURF.	
9110-26-92	9242911306/12/95	954136
804-22-91	9141091201/15/95	944009
708-21-90	9041961107-06-94	944255
607-18-90	9041851004-29-93	934087
1507-13-98	980127	
1412-12-96	960262	

QUANTITY	PART NUMBER	ITEM NO.	PART NAME	DESCRIPTION - MATERIAL	REV. NO.	REVISION DATE
1	146653-764	1	POWER CONTROL BOARD ASS'Y.	BOARD ASS'Y.	15	07-13-98
1		2	POWER CONTROL BOARD	BOARD		
1		3	CONNECTOR	P6 14 PIN		
1		4	CONNECTOR	P5 18 PIN		
1		5	RELAY	CR1		
1		6	RELAY	CR3		
12		7	DIODE	D1-7, 19, 20, 22, 24, 27 1N4002		
7		8	DIODE	D12-D16, D18, D32 MR501		
1		9	DIODE	ZD1 1N4744		
10		10	DIODE	D9, 10, 21, 23, 25, 26, 28, 29, 30, 31 1N4148		
1		11	DIODE	ZD3 1N5333A		
1		12	DIODE	ZD4 1N4740A		
6		13	CAPACITOR	C25, C26, C35-C38 0.1μf		
1		14	CAPACITOR	C27 10μf		
2		15	CAPACITOR	C28, C29 100μf		
1		16	RESISTOR	R25 4.75K		
7		17	RESISTOR	R26, 40, 41, 44, 46, 50, 51 10K		
4		18	RESISTOR	R27, 33, 34, 59 4.75K		
3		19	RESISTOR	R47-R49 1M		
1		20	RESISTOR	R29 100K		
1		21	RESISTOR	R30 1K		
1		22	RESISTOR	R31 619Ω		
1		23	RESISTOR	R32 619Ω, 1W		
2		24	RESISTOR	R35, R36 2.16K, 1W		
1		25	RESISTOR	R37 1K, 2W		
1		26	RESISTOR	R38 20Ω, 6.5W		
1		27	RESISTOR	R42 680Ω, 5W		
1		28	RESISTOR	R43 0.4Ω, 5W		
1		29	RESISTOR	R45 182Ω, 1W		
5		30	OPTO COUPLER	U25-U29 H11G2		
1		31	TIMING CIRCUIT	U31 MC1455P1		
5		32	TRANSISTOR	Q1, Q3, Q12, Q14, Q16 MPSA06		
2		33	TRANSISTOR	Q4, Q11 TIP42A		
1		34	TRANSISTOR	Q5 TIP125		
1		35	TRANSISTOR	Q8 2N6727		
1		36	TRANSISTOR	Q2, 2N3904		
1		37	TRANSISTOR	Q10, 2N3905		
1		38	CURRENT PROTECTOR	PTC1 1.27Ω, 0.43A		
1		39	CURRENT PROTECTOR	PTC2 0.08Ω, 3.56A		
1		40	TERMINAL STRIP	J1-J4		
3		41	SHUNT			
1		42	TERMINAL BLOCK	J5		
1		43	HEAT SINK			
3		44	CAPACITOR	C31-C33 560pF		
1		45	CAPACITOR	C30 22μf 63V		
1		46	DIODE	ZD5 1N4730		
1		47	RESISTOR	R52 3.32K		
4		48	RESISTOR	R53-R56 1K		
2		49	RESISTOR	R57, R60 200Ω		
1		50	RESISTOR	R58 0.5Ω, 5W		
1		51	CAPACITOR	C34 330μf		
1		52	TRANSISTOR	Q9 2N3903		
1		53	RESISTOR	R28, 49, 9K		
2		54	TRANSISTOR	Q13, Q15 MPSA56		

NOTE:

1. FOR WIRING SCHEMATIC SEE DRAWING NO. 146653-761.
2. STAMP LATEST REVISION NUMBER USING APPROX. 14 PT. WHITE LETTERING.
3. SPACE R38, R42, R43 & R58 A MINIMUM OF 1/16" OFF THE P.C. BOARD.
4. USE SILICONE HEAT SINK COMPOUND BETWEEN COLLECTOR SURFACE OF Q5 (ITEM *34) AND HEAT SINK (ITEM *43) FOR MAXIMUM HEAT TRANSFER.
5. BOARD TO BE CONFIGURED FOR AC TABLE OPERATION, INSTALL JUMPERS J1, J2 AND J3 (ITEM *41).
6. REMOVE VENT SEAL AFTER WASHING.
7. HAND SOLDER R60 AND D31 AS SHOWN IN DETAIL 'B'.

ENGINEERING REFERENCE

BATTERY TABLE TO BE CONFIGURED AT FINAL ASSEMBLY BY REMOVING J1, J2 AND J3 (ITEM *41) AND INSTALLING J4 AND J5.

STERIS	STERIS Corporation Mentor, OH	TITLE POWER CONTROL BOARD ASS'Y.
DATE 12-10-98	DATE 07-28-97	DATE 07-28-97
BY RAL	BY FJZ	BY SMS
146653-764	146653-764	146653-764

OVERIDE SWITCH BOARD
P/N 93909-295

OVERIDE CONTROL BOARD
P/N 134469-179

- NOTE:
1. DN1-DN5 ARE 1N4150 DIODE NETWORK.
•RPM504100SP
 2. D1, 2, 3, 21 THRU 31 ON BOTH BOARDS
ARE 1N4002
 3. D1-D6 ARE TIP120
 4. R1-R6 ON SWITCH BOARD ARE 4.75K, 1%,
1/2W. METAL FILM
 5. ZD1-ZD5 ARE 1N4730
 6. R1 & R2 AT CR4 & CR3 ARE 100 OHM,
1/4 WATT.
 7. C1 & C2 ARE 1000 MICROFARAD
50 WVDC ELECTROLYTIC.
 8. F1 IS 4 AMPS. 125 VOLT PICO FUSE.
 9. D4-D7, D10, D11, D13-19 ARE CHANGED
TO 1N4934 ON CONTROL BOARD.

TOLERANCE STANDARD	FRACTIONAL 1/64 DECIMAL 1.005
UNLESS OTHERWISE NOTED	ANGULARITY 1/16 MACH. SURF. 1/32
3 06/12/95 554137	
2 06-22-92 24132	
1 06-25-91 PER 26	
0 05-23-90 PER 74	12-12-96 960262

STERIS Corporation Mentor, OH	TITLE OVERIDE SWITCH SCHEMATIC 3080 (BIERI HYDRAULICS)
DATE: 06-23-96 BY: RRD/SHM	FIRST MADE FOR: Dwg. No. 141210-127

REF: 1368D7-085
 141210-139 1 1

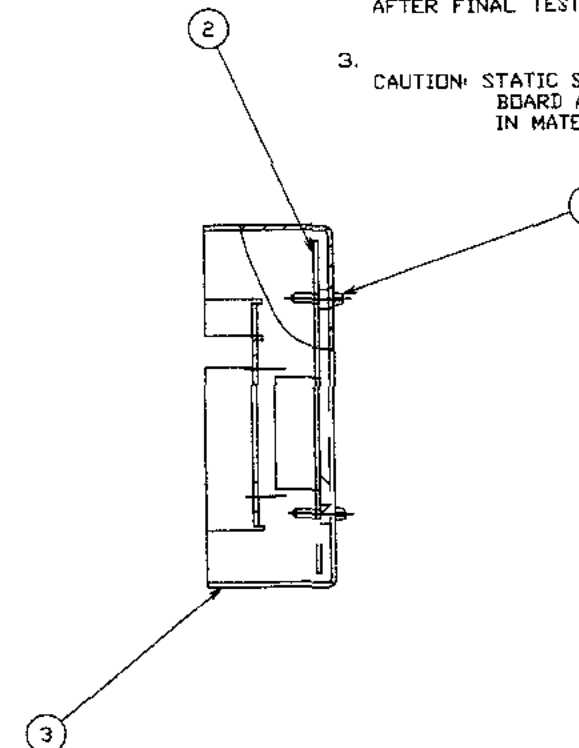
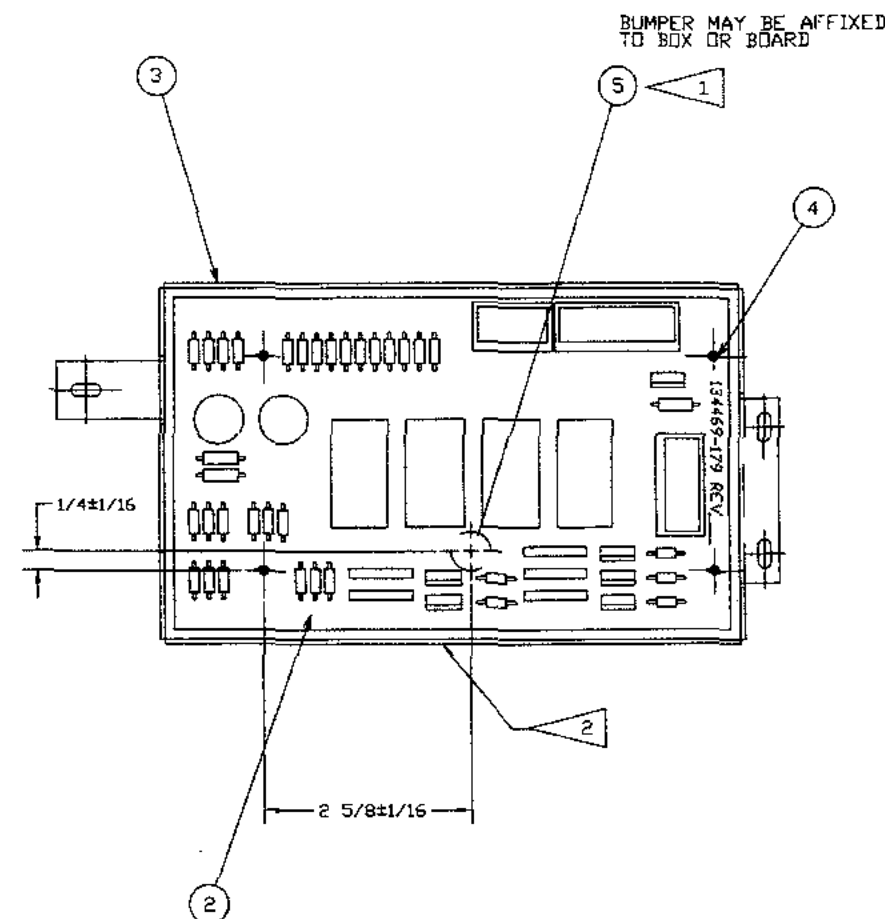
QTY	PART NAME	REV	DATE	DESCRIPTION, MATERIAL	BY	DATE
1	141210-139	1		1 OVERRIDE BOARD		04-30-98
1		2		2 CONTROL BOARD ASSY.		
1		3		3 HOUSING, OVERRIDE BOARD		
4		4		4 POST SUPPORT		
1		5		5 BUMPER		

NOTES:

1. USE DEGREASER (R5300-582) OR ISOPROPYL ALCOHOL TO CLEAN AREA WHERE BUMPER (ITEM 5) IS TO BE APPLIED.

2. INK STAMP ON HOUSING WITH 3/16" HIGH LETTERS OR AFFIX PRINTED LABEL ON HOUSING WITH PART NUMBER, AND SERIAL NUMBER USING INDELIBLE INK AFTER FINAL TEST.

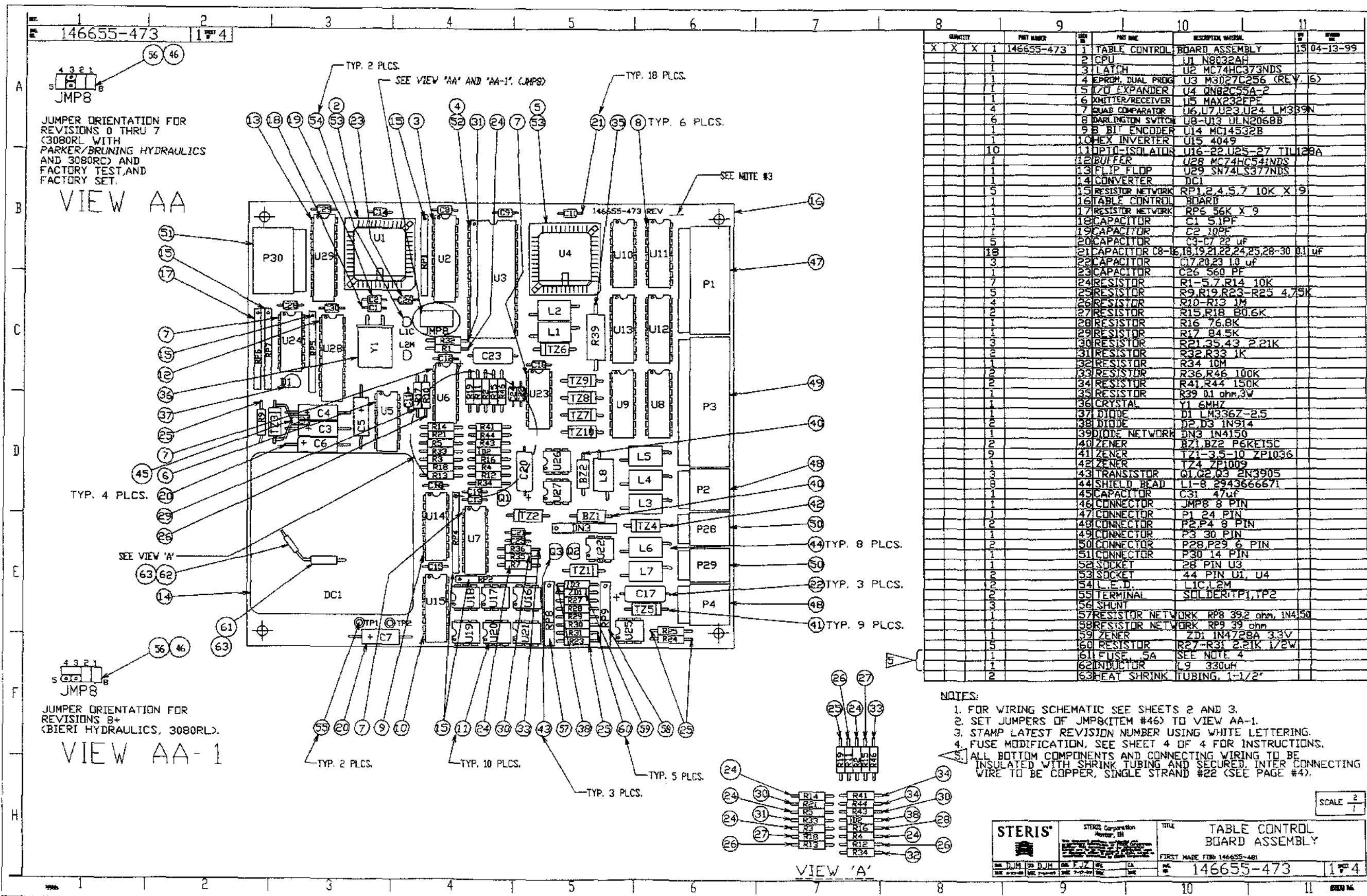
3. CAUTION: STATIC SENSITIVE MATERIAL ON CONTROL BOARD ASSY (ITEM 2). STORE AND TRANSPORT IN MATERIALS THAT ARE ANTISTATIC.



TOLERANCE STANDARD	FRACTIONAL +/- 1/64	DECIMAL +/- .005
UNLESS OTHERWISE NOTED	ANGULARITY +/- .1°	MACH. SURF. 125
3104-30-98 984139		
2101-06-98 984001		
1106-12-95 954137		
0107-20-90 934027		

STERIS	STERIS Corporation Revlon, IA	TITLE OVERRIDE CONTROL BOARD BOX ASSEMBLY
RRD	SHM	FIRST MADE FOR 141210-132
141210-139	1	1

SCALE 1



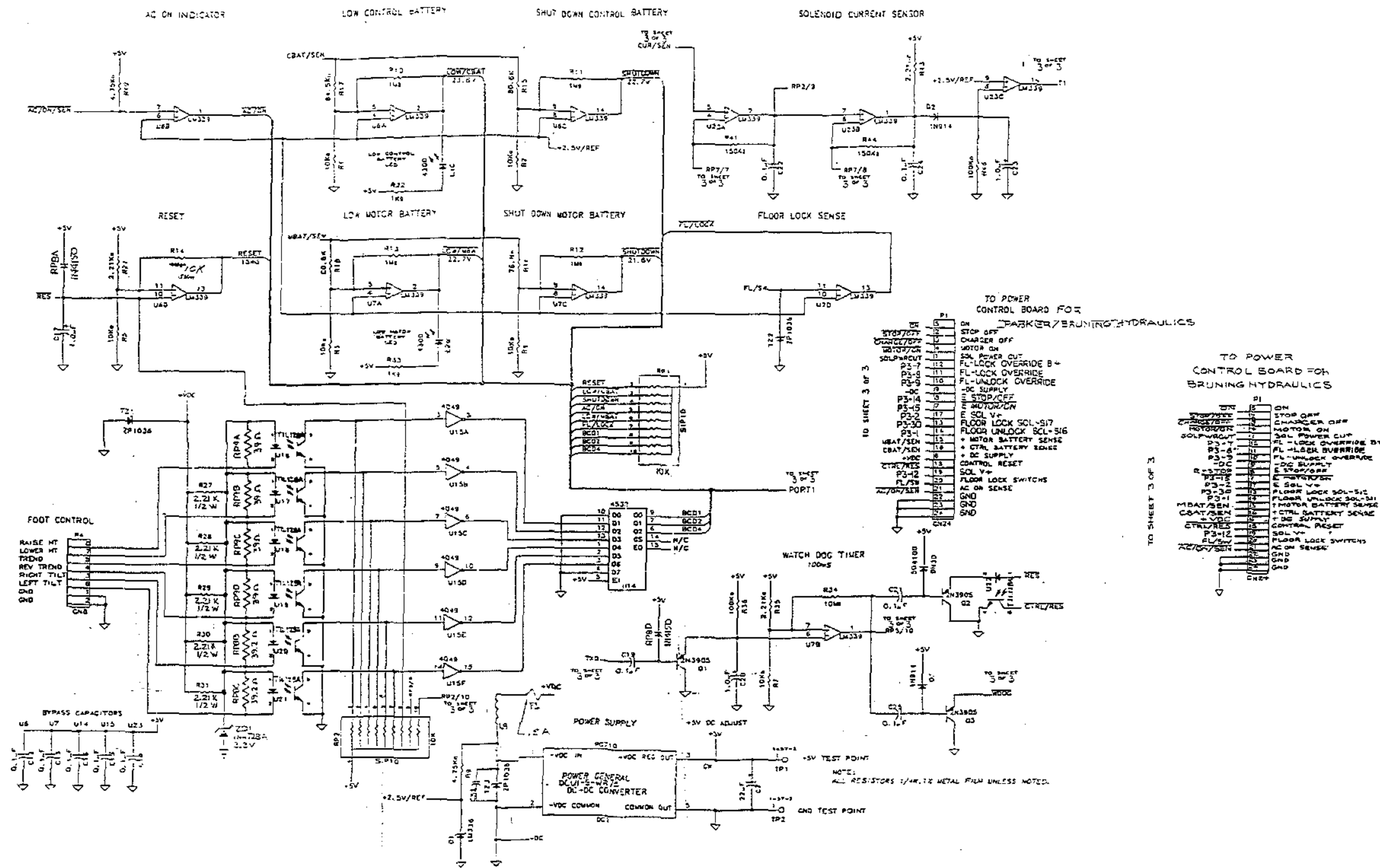


TABLE CONTROL SCHEMATIC
DIAGRAM
Dwg. No. W146655-473
Rev. 15 Date 4/13/99
Page 2 of 4

⚠ WARNING - PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Repairs and adjustments to this equipment must be made only by fully qualified service personnel. Non-routine maintenance performed by inexperienced, unqualified personnel or installation of unauthorized parts could cause personal injury, invalidate the warranty, or result in costly damage. Contact STERIS Engineering Service regarding service options.

This section provides procedures for removing assemblies and detail parts from the Amsco® 3085 SP™ table. Re-assembly is essentially the reverse of the disassembly. Refer to Section 14, Illustrated Parts Breakdown, where indicated, to identify parts discussed in the text. After replacing a part, perform the appropriate inspection and maintenance procedures. Always perform applicable testing/adjustments after replacing hydraulic components.

Contamination Control Aspects of Hydraulic Field Service

To prevent contamination from entering the hydraulic system, all possible care must be taken during field hydraulic servicing. The system is designed to maintain oil and component cleanliness during normal operation. When any hydraulic line or component is opened, the system is vulnerable to the entrance of contaminants (i.e., solid particles). Average particle sizes in the oil are normally about 25 microns, or 0.001". Some components may fail in a hazardous way if subjected to particles greater than 100 microns, or 0.004".

Precautions must be taken when servicing the hydraulic system. Working in the field is not the ideal situation, but being aware of the need for maintaining system cleanliness, using common sense and good practices, and being dedicated to contamination control should lead to success.

» Work Place

The O.R. would be the ideal place to perform hydraulic service, but a maintenance area or some other "back room" is the more probable location. Avoid, at all costs, working in or next to a room where any woodworking is carried out. Almost as bad is an area where metal work, especially grinding, is done. The airborne particles generated by these or other similar operations are devastating and uncontrollable. If you have no choice, at least ensure that no such activities have been performed there for several hours and that none will occur during servicing.

Try to work in a place with no nearby doors through which people will be continually passing. The less people-traffic around you, the better. Stay away from heating and cooling vents that also put particulates into the air.

- » **Tools** Tools, gauges, hydraulic plugs, caps, etc., must be extremely clean during servicing. Clean tools with a lint-free cloth if possible. Hands and fingernails must also be clean when handling hydraulics. Scrub fingernails with a brush.
- Always place tools and parts on a clean surface as work is being done. And, of course, no smoking, eating, or drinking when working with hydraulics.

- » **General Procedures** Wipe all components to be serviced, and areas adjacent to them, with a lint-free cloth.
- **Breaking connections** – If the connection is to remain broken for any length of time, both ends of the connection must be plugged or capped with clean parts. If this is impractical, at least cover the open port with a lint-free cloth. A rubber band can be used to hold cloth in place.
 - **Removing components** – When a component is removed, place it on, and cover it with, a lint-free towel.
 - **Handling parts** – Try to handle all hydraulic components by touching only those surfaces which do not interact with the hydraulic system oil.
 - **Assembling** – Examine all surfaces that come in contact with the hydraulic system oil (wetted surfaces). Any visible particles (i.e., 0.002" or more in diameter) must be removed. Also examine O-rings and O-ring seats for scratches and/or tears, as well as contamination.
- Be careful that any critical surfaces do not unnecessarily touch anything during assembly.
- Be sure to torque all fitting, valves, etc., per specifications.
- **Completing work** --- Clean the external surfaces of the work area as before. Any leaks will be more easily detected if all areas are clean before checking.
- When the work is complete, check that the table functions normally ... not only the function that was repaired, but all functions.

Shroud Removal/ Replacement

Refer to Figure 14-1 unless otherwise noted.

IMPORTANT: Removing the shroud may dislodge the P9/P10 cable. After shroud is removed, check that this cable is still securely installed.

- » **Removal**
1. Lower table to lowest position.
 2. Remove four cap hex sockethead screws (Item #5) securing upper shroud (Item #4) to shroud cap assembly (Figure 14-10, Item #1).
 3. Lower shroud pieces.
 4. Each column shroud (Items #2, 3, and 4) consists of two pieces that snap together. To remove, slip end of flat-head screwdriver into seam slots and pry pieces apart. Lift the parts away from table column and set aside. Repeat this procedure for each column shroud.
 5. Raise table to maximum height.


6. The base shroud (Item #1) is fastened together by two screws (Item #6) at the top (front and back), and two spring catches at the bottom (front and back).

Remove the two screws, then reach inside shroud and unfasten both spring catches.

7. Remove the front half of base shroud.
8. Remove ground wire (Figure 14-20A, #24) attached to back half of base shroud assembly by unscrewing the 3/8" nut from weld stud.
9. Remove back half of base shroud.

» Replacement

Refer to Figure 14-1.

 **CAUTION:** To prevent rubber bumpers from being cut off, replace base shroud pieces carefully and evenly.

1. Raise table to its maximum height.
2. Replace the back half of base shroud and reconnect ground wire to weld stud.
3. Make sure the manual foot pedal is in DOWN position and replace front half of base shroud.
4. Check that front and back pieces are even, then fasten spring catches. Reattach screws at top of joining seam (front and back).
5. Lower table to lowest position.
6. Replace the bottom intermediate (Item #2) shroud pieces, snapping them together evenly around the column. Then replace the top intermediate (Item #3) shroud pieces, snapping them together evenly around bottom intermediate shroud.
7. Replace the upper (Item #4) shroud pieces, snapping them together evenly around top intermediate shroud.
8. Raise upper shroud and fasten in place with the four screws (Item #5) removed previously.
9. Raise table half-way up. Check to be sure that interlocks between shroud pieces (top and bottom) are connected.
10. To ensure proper adjustment of shroud sections, apply hand pressure to the left side of bottom base cover (foot end). Shroud pieces will self adjust.
11. Raise and lower the table to make sure the shroud sections function freely, without binding.

Follow this procedure to position the base shroud on the base casting to provide the necessary clearance between column components and base shroud.

» Base Shroud Adjustment

1. If replacing the bumpers, apply Loctite 222 to the threads and assemble into the base casting as shown in Figure 12-1. Bumpers 1 and 2 should protrude $5/16" \pm 1/32"$ (8 mm ± 0.8 mm) from the casting, and the other three should be flush with the casting.
2. Position base shroud onto base with shroud in contact with bumpers 1 and 2.
3. Raise the tabletop to its maximum height. Articulate seat section to its maximum UP position (use TREND and REFLEX functions) and articulate tabletop to its maximum RIGHT SIDE TILT position.
4. Lower tabletop until lower end of seat cylinder is just below the upper edge of the shroud. The minimum clearance between the seat cylinder (retract port block) and the shroud should be $15/32"$ (11.9 mm) on the left side and $5/32"$ on the foot end as shown in Figure 12-2. If either (or both) of these dimensions is less than the minimum, increase the clearance by increasing the projection of the bumpers.
5. Articulate tabletop from full RIGHT SIDE TILT to full LEFT SIDE TILT, observing the clearance between the seat cylinder and the shroud. The minimum clearance should never be less than $5/32"$ (4 mm). Adjust bumper 1 if necessary.
6. The projection of bumpers 1 and 2 from the base casting is now fixed. Increase the projection of bumpers 3, 4 and 5 until they are snug against the shroud.

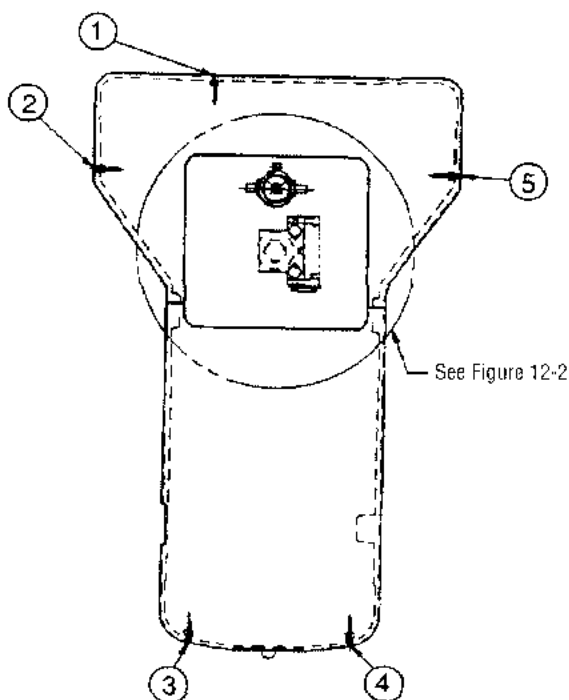


Figure 12-1. Bumper Positioning

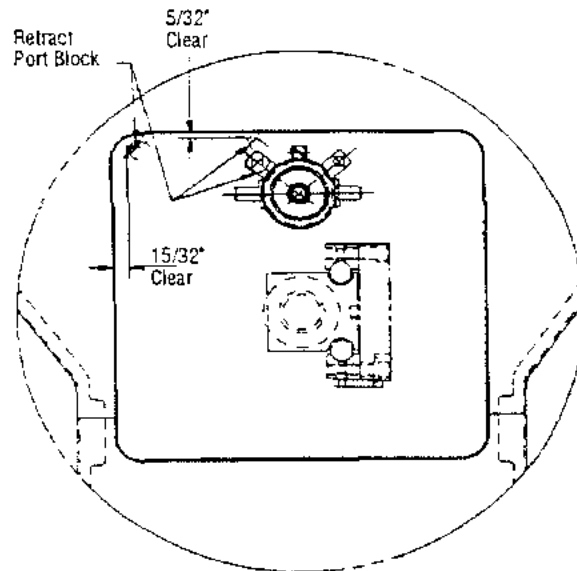


Figure 12-2. Minimum Seat/Cylinder Base Shroud Clearances

Hydraulic System Pressure Test

1. Remove the cap from the pressure test port located on the pump pressure port banjo fitting (see Section 9).
2. Install the pressure gauge into the test port using the hose supplied in the tool kit.
3. Using the override switches, operate a table function to the end of its limit (mechanical stop). With the movement stopped, but the pump still running (pump dead-headed), check the relief valve setting by monitoring the gauge. The setting should be 1750 (-25 or +50) psi.
4. If adjustment is necessary, loosen the locking or jam nut on the adjusting screw located on the battery side of the pump. Rotate the adjusting screw until the proper pressure is reached.
5. Remove the pressure gauge and reinsert the test cap.

Tabletop Leg Section Adjustment

1. Leg section articulation is powered by two hydraulic cylinders: one on the right side and one on the left side. The stroke of the cylinders is adjustable with cylinder rod stops to provide the same total articulation on each side. The leg section adjustment is made without the top board and all angles are measured with respect to the seat section casting.
2. Articulate the leg section to its full UP position using override switches. Measure and record the angle of each leg frame.
3. The UP adjustment is made with shims between the seat section frame and cap end cylinder clevis. Add shims to increase the angle by approximately 1°.
4. Loosen the cap screws, insert or remove the required shim thickness to give a maximum up position of 80°, then tighten the cap screws. Slightly raise the seat section for better access to the screws.
5. Repeat steps. There are two sections to the leg, each must be $81^\circ \pm 1^\circ$, and the two should also be within 1° of each other.
6. Remove the cap screws one at a time and apply Loctite, then tighten.
7. Articulate the leg section to its full DOWN position, measure and record the angle of each leg section frame.
8. The DOWN adjustment is made by rotating the cylinder rod stops on the cylinder rods. Turn the cylinder rod stops toward the cylinder body to decrease maximum DOWN articulation or away from the body to increase articulation. A 1/8-revolution of the stop will alter the angle by about 1°.
 - a. For the right cylinder, which has the return-to-level hardware attached to it, the attachment bracket (see Figure 14-15, #9) must be removed prior to leg DOWN adjustment. The cylinder rod stop must be adjusted so that one of the radial tapped holes is vertical with respect to the cylinder body.
9. Back the articulation away from its maximum DOWN position a fraction of a degree to allow easy rotation of the cylinder rod stop. Make the necessary adjustment based on steps 7 and 8 to give a maximum down angle of 105°.
10. Repeat step 7. The measured angles must be $105^\circ \pm 1^\circ$ and within 1° of each other. Repeat steps 8 and 9 if necessary.
11. Apply Loctite to the set screws and tighten in the cylinder rod stops.
12. Double check all four adjustments. Correct as required.

Back Section Adjustment

1. Back section articulation is powered by two hydraulic cylinders: one on the right side and one on the left side. The stroke of the cylinders is fixed and may not be the same on both sides. This unequal stroke will produce greater articulation on one side than the other side and the cylinders must be adjusted to balance the over travel between the maximum up and down positions. This minimizes the racking or twisting of the back section when it's in the full up or down positions.
2. Articulate the back section to its full DOWN position. Measure and record the angular position of both the right and left side.
3. The cylinder rod should be turned into the clevis to increase the DOWN articulation and out of the clevis to decrease the articulation. A 1° change is equal to 1.10 revolution of the rod in the clevis.
4. Back the articulation away from its maximum DOWN position approximately 1° . Make the necessary adjustments based on steps 2 and 3 to give a maximum DOWN position of 25° .
5. Repeat step 2. The measured angles must be $25^\circ \pm 1^\circ$, and the amount of racking must be 0.5° or less. Repeat step 3 if necessary.
6. Articulate the back section to its full UP position. Measure and record the angular position of both the right and left side. The amount of racking must be 0.5° or less; if not, adjust to equalize the amount of racking in the maximum UP and DOWN positions.
7. Apply Locktite 290 to relock adjustments.

Seat Section Adjustment

1. Articulate the seat section to its full DOWN position. Measure and record its angle.
2. The cylinder rod should be turned into the knuckle to increase the DOWN articulation, and out of the knuckle to decrease the DOWN articulation. A 1° degree change is equal to 1.18 revolution of the rod and the knuckle.
3. To ease adjustment, raise the seat section to horizontal or above horizontal. Loosen the jam nut. Make the necessary adjustment based on steps 1 and 2 to give a maximum DOWN position of 25° . Tighten the jam nut against the knuckle.
4. Repeat step 1. The measured angle must be $25^\circ \pm 1^\circ$. Repeat steps 3 and 4 if necessary.

Side Tilt Cylinder Adjustment



CAUTION: Before articulating or making any adjustments to the table, be certain that no electrical or hydraulic hoses are subjected to stress or pinching.

1. Articulate table to level position.
2. Articulate table into a fully right side tilt. Using a digital protractor, measure the angle of the right tilt.
3. If tilt angle is not $18^\circ \pm 2^\circ$, adjust angle as follows:
 - a. Remove the clevis locking plate by removing the two socket-head screws securing the clevis locking plate.

WARNING - PERSONAL INJURY HAZARD: The lock mechanism has a high spring force and can cause severe pinching. Keep fingers, etc. away from under the plunger and blocking.

CAUTION: Tilt articulation must be activated while adjusting the cylinder rod to release the brake mechanism. Failure to do this will destroy the cylinder.

b. Briefly run the tilt and place a block, such as a large screwdriver blade, behind the mechanical lock plunger on the side tilt cylinder so the mechanical lock does not engage when the tilt is stopped.

NOTE: With the locking plate removed, the shaft may have a tendency to screw into or unscrew out of the clevis. If this occurs, rotate the shaft back to the original position in the clevis when the tilt is stopped.

4. Articulate to right tilt, but before full extension. Adjust angle by rotating the cylinder shaft.
5. Reinstall the clevis locking plate using the two socket-head screws. Make sure that the cylinder rod flat is square with the machined step on the clevis.
6. Remove the mechanical lock block by running the tilt while pulling the block out.
7. Articulate the table into full tilt and measure the degree of tilt. Angle must be $18^{\circ} \pm 2^{\circ}$. Readjust if necessary. If angle is correct, remove the socket-head screws securing the clevis lock plate. Apply Loctite 262 to the screws, reinstall and tighten screws, making sure that the cylinder rod flat is square with the machined step on the clevis.

Leg Return-to-Level and Leg Full-Up Adjustment

IMPORTANT:

- The adjustment of the Leg Full-Up position is affected by the adjustment of the Leg Return-to-Level position. Therefore, the Leg Return-to-Level procedure must precede the Leg Full-Up procedure.
 - If, for any reason after this procedure is complete, the cam shaft is repositioned, both the Leg Return-to-Level and Leg Full-Up positions must be rechecked and any required adjustments made to ensure conformance with the requirements.
 - If, for any reason after this procedure is complete, the right leg cylinder is replaced, or the right leg cylinder pivot block shims are changed, the Leg Return-to-Level and Leg Full-Up positions must be rechecked and any required adjustments made to ensure conformance with the requirements.
 - See Figure 12-3 and Figure 12-4 for information and a picture of the environment and hardware dealt with in this procedure.
1. **Initial Leg Full-Up Angle Check** --- Disconnect the leg section Return-to-Level wiring. Actuate leg up until the motion stops. Measure the angle that the leg section makes with the seat section. Ensure that it is $81^{\circ} \pm 1^{\circ}$. Record the angle.
 - a. If the angle is not $81^{\circ} \pm 1^{\circ}$, the initial leg adjustment is not correct and the leg cylinder pivot block shims must be reassessed - refer to "Tabletop Leg Section Adjustment" in this Section.
 - b. Reconnect the leg section Return-to-Level wiring.
 2. **Leg Return-to-Level Position Adjustment** --- Refer to Figure 12-3 for a flow chart for this adjustment procedure.
 - a. Lower the leg to about 10° below the seat section angle. Actuate Return-to-Level. When all motion has stopped, note the angle that the leg section makes with the seat section.

If during the Return-to-Level function the leg does not come to rest — but rather oscillates up and down from the horizontal position, reposition the adjustable switch away from the cylinder rod.

- b. Raise the leg section to about 10° above the seat section angle. Actuate Return-to-Level. When all motion has stopped, note the angle that the leg section makes with the seat section.
 - c. If the angles measured in step 1 are within specification, the Leg Level Position Adjustment is complete. Proceed to Leg Full-Up Position Adjustment.
 - d. If the angles measured in steps 2.a. and 2.b. are not within specification and their difference is less than 3°, axial adjustment of the cam shaft position is required: Loosen the screw which attaches the cam shaft to the bracket, slide the shaft fore or aft, and retighten the screw. Note that a change in position of the shaft of 0.020" results in an angle change of about 1°.
- If the leg section stopped too high, slide the cam shaft towards the cylinder rod.
 - If the leg section stopped too low, slide the cam shaft away from the cylinder rod.
 - Repeat step 2. Leg Return-to-Level Position Adjustment.

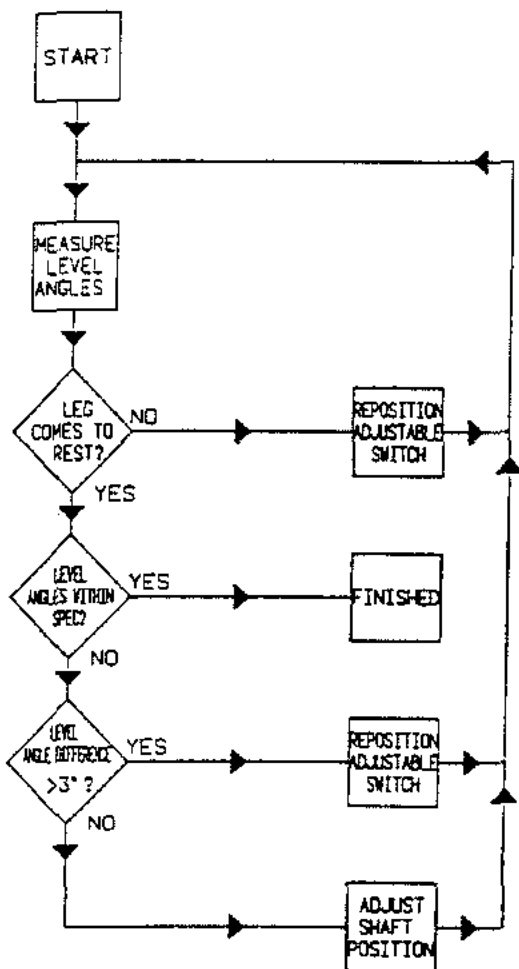


Figure 12-3. Leg Level Position Adjustment Procedure for Return-to-Level

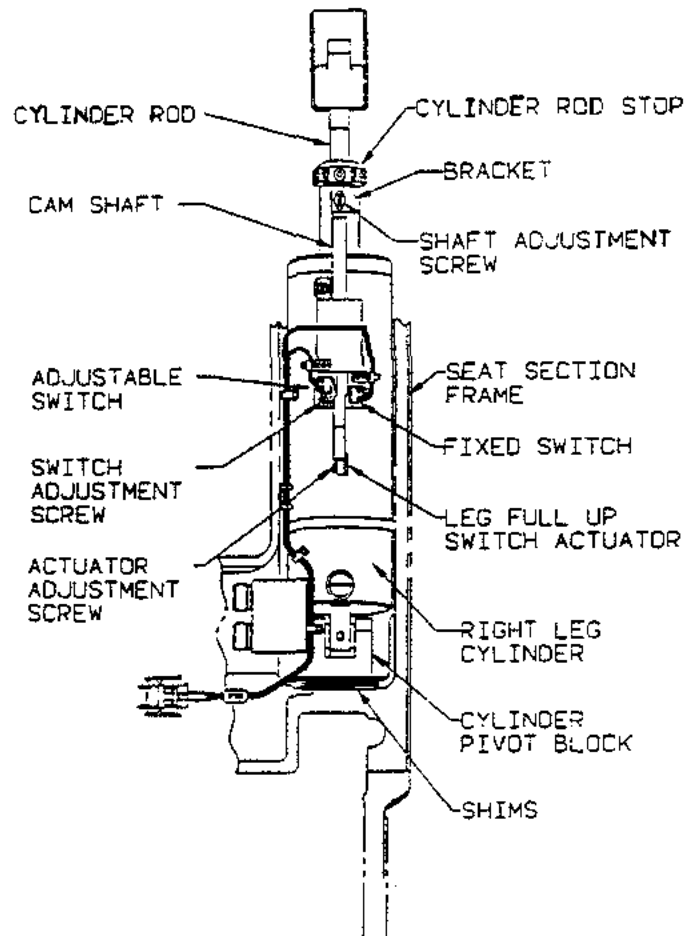


Figure 12-4. Leg Return-to-Level and Leg Full-Up Switch and Actuator Hardware

3. **Leg Full-Up Position Adjustment** — Ensure that the Return-to-Level wiring is properly connected. Actuate leg up until motion stops. Measure the angle that the leg section makes with the seat section.

- a. If the angle is both at least 1° less than that measured at the beginning of "Leg Return-to-Level and Leg Full-Up Adjustment" Section, and within the specification, the Leg Full-Up Position Adjustment is complete.
- b. If the angle is at least 1° less than that measured at the beginning of "Leg Return-to-Level and Leg Full-Up Adjustment" Section, but too low to meet specification, loosen the Leg Full-Up actuator screw and slide the actuator away from the cylinder rod a small amount. Go to paragraph 3 at the beginning of "Leg Return-to-Level and Leg Full-Up Adjustment."
- c. If the angle is within 1° of that measured in paragraph 1, loosen the Leg Full-Up switch actuator screw and slide the actuator away from the cylinder rod a small amount. Go to paragraph 3 at the beginning of "Leg Return-to-Level and Leg Full-Up Adjustment" Section.

4. Requirement Specifications:

- a. **Return-to-Level Angles** — After actuation of Leg Return-to-Level, for both the leg section initially above and below the seat section, the angle of the leg section, measured with respect to the seat section, shall be $0^\circ \pm 2^\circ$.
- b. **Leg-Up Angle** — When the leg is actuated fully up, the angle of the leg section measured with respect to the seat section shall be $80^\circ \pm 1^\circ$. In addition, the angle must be at least 1° less than the maximum angle permitted by the mechanical elements (refer to paragraph 4).

Floor Lock Linkage and Switch Adjustment

See Figure 12-5.

1. Back off the floor lock limit switch actuation screw to prevent damage to the switch (if applicable).
2. Press the FLOOR LOCK function button until the floor lock cylinders are fully extended.
3. Turn the cylinder rod out of the clevis until the gap between clevis and the floor lock housing is $1/8" \pm 1/32"$ (3.2 ± 0.8 mm) (the linkage should be just over center).

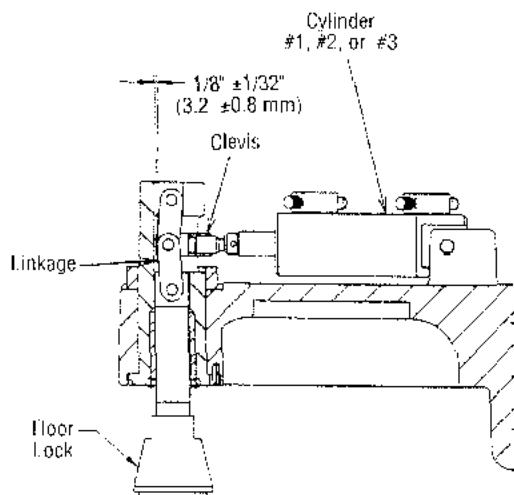


Figure 12-5. Floor Lock Linkage

4. Adjust floor lock switch actuator screw so that the switch is just actuated when the floor locks are locked (if applicable).
5. Apply Loctite #290 (R5300-540) liberally to both actuator screws and the cylinder rods where they enter the clevis.

Floor Lock Assembly Adjustment

1. With table on a level floor, engage the floor locks. Check distance between each caster and floor, it should be $1/4" \pm 1/32"$ (6 ± 0.8 mm).
2. If necessary, adjust floor locks as follows:
 - a. Unlock floor locks and turn each foot onto its shaft until the foot will not make contact with the floor when the floor locks are engaged.
 - b. Engage the floor locks. Unscrew each foot from its shaft until it just makes contact with the floor.
 - c. Unlock the floor locks and unscrew each foot an additional 4-1/2 turns.
 - d. Verify the distance between the caster and floor is $1/4" \pm 1/32"$ (6 ± 0.8 mm) with floor locks engaged.

LS3 - Seat Section Limit Switch Adjustment

1. With the tabletop sections horizontal, manually depress limit switch LS3, mounted to saddle under seat section. Attempt to actuate FLEX. The pump should turn on, but no motion should occur. Repeat for REVERSE TRENDELENBURG.
2. With the switch released, actuate the same functions. When motion has started, depress the switch. The pump should stay on and motion should stop.
3. Starting with the tabletop horizontal, actuate BACK RAISE at least 10° to ensure that the articulation actuates the seat limit switch. Actuate REVERSE TRENDELENBURG until motion stops. Check that the seat limit switch LS3 actually stopped the motion by actuating REVERSE TRENDELENBURG with the override control switches located on the shroud cap. The seat section should move farther down by a small amount.
4. If limit switch LS3 does not function as described above, check to be sure it is being actuated when seat section is within $0.5^\circ \pm 0.3^\circ$ of its mechanical stop (use REVERSE TRENDELENBURG function). If limit switch requires adjustment, proceed as follows:
 - a. Position tabletop at maximum RIGHT TILT for access to limit switch. Remove P28 from control board housing box.

NOTE: The shrouds have to be lowered but not removed to gain access to P28.

- b. Connect P28 to a voltmeter set to read resistance.
- c. Position the tabletop so the seat section is within $0.5^\circ \pm 0.3^\circ$ of mechanical stop and check the switch. If switch is not made, adjust the switch until it is energized.
- d. Using the override switch, position the tabletop to its mechanical stop in REVERSE TRENDELENBURG to make sure the switch does not get damaged.
- e. Remove the voltmeter and reinstall P28 into control board housing box. Level tabletop and actuate REVERSE TRENDELENBURG to check that LS3 stops table motion within $0.5^\circ \pm 0.3^\circ$ of its mechanical stop.

LS4 - Back Section Limit Switch Adjustment

1. With the tabletop sections horizontal, manually depress the switch mounted to the underside of the back section. Attempt to actuate FLEX. The pump should turn on, but no motions should occur. Repeat for TRENDELENBURG and BACK LOWER.
2. With the switch released, actuate the same functions. When motion has started, depress the switch. The pump should stay on and motion should stop.
3. Starting with the tabletop horizontal, actuate BACK LOWER until motion stops. Check that motion stopped due to the back limit switch by actuating BACK LOWER with the override control switches located on the shroud cap. The back section should move further down by a small amount.
4. If limit switch LS4 does not function as described above, check to be sure it is being actuated when back section is within $0.5^{\circ} \pm 0.3^{\circ}$ of its mechanical stop (use TRENDELENBURG function). If the limit switch requires adjustment, proceed as follows:

- a. Remove P29 from control board housing box and connect it to a voltmeter set to read resistance.

NOTE: The shrouds have to be lowered but not removed to gain access to P29.

- b. Position the tabletop so the table back section is within $0.5^{\circ} \pm 0.3^{\circ}$ of its mechanical stop (use TRENDELENBURG function). Tighten limit switch locknut until the voltmeter indicates switch is made. If locknut adjustment range is not adequate, install switch pushbutton extension (P-129360-679) using Loctite RC/609.
- c. Using the override switch position the table to its mechanical stop in TRENDELENBURG and make sure the switch did not get damaged.
- d. Remove continuity tester and reinstall P29 into control board housing box. Level tabletop and actuate TRENDELENBURG function to ensure LS4 stops table motion within $0.5^{\circ} \pm 0.3^{\circ}$ of its mechanical stop.

LS5 - Column Limit Switch Adjustment

1. Using the override control switches, raise the tabletop to its maximum height.
2. Lower the tabletop approximately $1/16"$ (1.59 mm) from maximum position.
3. Set LS5 height and depth so that the switch disengages when the roller on the actuator connects with the "V" slot.
4. Tighten switch mounting bracket screws.
5. Using hand control, actuate tabletop RAISE and LOWER functions, checking to make sure LS5 stops table motion $1/16" \pm 1/32"$ (1.59 \pm 0.79 mm) before maximum table height.

Longitudinal Lash Adjustment

NOTE: Lash is the clearance or "play" between adjacent movable mechanical parts.

Refer to Figure 14-7.

1. Longitudinal lash is controlled by moving the adjustable guide shaft (Item #4) on the head-end side of the column. The guide shaft is secured to the column by seven 1/2" hex head machine screws (Item #8). Five set screws (Item #12) are provided in the backer plate to aid in adjustment.
2. Check the column for lash with the tabletop at its minimum, medium, and maximum elevations. In most cases, excessive lash will be found only at one elevation, and adjustment should be made only in that area. If the lash is excessive at all elevations, adjust as follows:
 - a. Loosen the seven screws, then finger-tighten them: starting with the column all the way down, tighten the bottom set screw until the gaps between the guide rod bearings and the guide rods are minimal. Raise the column to its midpoint, then repeat the tightening procedure on the middle set screw. Raise the column to its uppermost position and repeat the tightening procedure on the upper set screw.
 - b. Firmly tighten the top screw. Lower the column to its midpoint and firmly tighten the middle screw. Lower the column to the bottom and firmly tighten the bottom screw. Firmly tighten the remainder of the screws as the column is being raised, with one guide rod bearing above and one below the screw being tightened. Turn in the remaining set screws until they bottom.
 - c. Check the motion of the column as it is being raised and lowered. It should move up and down freely with no sticking, minimal bearing lash and uniform speed. If problems are encountered, repeat steps a. and b. Occasionally it may be necessary to make adjustments at the intermediate points between the top and middle, or bottom and middle. Make these adjustments by repeating steps a. and b.
 - d. Torque the seven 1/2" (13 mm) hex head machine screws to 150 ±5 ft-lbs. Recheck the column motion as outlined in step c.

NOTE: Do not remove all of the column lash or inadvertently make the column too tight, creating excessive loads on the bearings and producing premature bearing failure. Removing all lash could also produce a sticking condition on the column so that it will not lower after remaining at one height for a period of time.

Lateral Lash Adjustment

Refer to Figure 14-7.

1. Longitudinal lash must fall within its allowable limits before the lateral lash adjustment is started.
2. Lateral lash is controlled by adjusting the four socket head cap screws adjacent to the bearings in the top column section. Each screw controls the lash only for its adjacent bearing. Turning the screws clockwise decreases the lash, and turning them counterclockwise increases the lash.
3. Raise the tabletop near its maximum height, until the two bottom socket head screws are in line with the two access holes in the bottom column section.
4. Lash can occur in any of the four bearings; however, only certain combinations produce lateral lash: all four bearings, any three bearings, and the two top bearings. Determine which bearings require adjustment, and adjust only the ones with lash.
5. Turn the socket head cap screw until the lash is removed from the bearing and then back it off about 1/16 of a revolution.
6. Check the motion of the column as it is being raised and lowered. It should move up and down freely, with no sticking, minimal bearing lash, and uniform speed. If problems are encountered, repeat steps 3, 4, and 5.

NOTE: Do not remove all of the column lash or inadvertently make the column too tight, creating excessive loads on the bearings and producing premature bearing failure. Removing all lash could also produce a sticking condition on the column so that it will not lower after remaining at one height for a period of time.

Rotational Lash Adjustment

1. Longitudinal lash must fall within its allowable limits before the rotational lash adjustment is started.
2. Rotational lash is controlled by adjusting the four socket head cap screws adjacent to the bearings in the top column section. Each screw controls the lash only for its adjacent bearing; turning the screws clockwise decreases the lash; turning the screws counterclockwise increases the lash.
3. Raise the tabletop until the two bottom socket head cap screws are in line with the two access holes in the bottom column section (nearly maximum height).
4. Lash can occur in any of the four bearings; however, only certain combinations produce rotational lash: all four bearings, any three bearings, the two head-end bearings, or the two foot-end bearings.
5. Turn the socket head cap screw until the lash is removed from the bearing, then back it off about 1/16 of a revolution.
6. Check the motion of the column as it is being raised and lowered. It should move up and down freely, with no sticking, minimal bearing lash, and uniform speed. If problems are encountered, repeat steps 3, 4, and 5.

NOTE: Do not remove all of the column lash or inadvertently make the column too tight, creating excessive loads on the bearings and producing premature bearing failure. Removing all lash could also produce a sticking condition on the column so that it will not lower after remaining at one height for a period of time.

Hydraulic Cylinder Replacement



WARNING - PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD: Breaking hydraulic fittings will cause associated table section to fall and excessive fluid may flow from the fitting.

IMPORTANT: Holding check valves are located on the column manifolds, not in the cylinders.

» Floor Lock, Foot End, Right (Looking at Base from Foot-End)

Refer to Figure 14-3 unless otherwise noted.

• Removal

1. Remove shroud as described at the beginning of Section 12.
2. Unlock (raise) floor locks so that there is no pressure on them.
3. Disconnect all hose fittings from the tees on the cylinder (Item #32).

NOTE: Install clean cap on end of hose to prevent contamination.

4. Use a hammer and punch to remove the pivot pin or remove O-rings where used.
5. Unscrew cylinder rod from shaft and link assembly using an allen wrench.
6. Lift cylinder away from base.
7. Remove fittings from cylinder.
8. Wipe fittings and put them on a lint-free cloth until reuse.

• Replacement

1. Remove new cylinder from plastic bag and install fittings (from old cylinder) on new cylinder orienting them as closely as possible to the correct position.
2. Tighten cylinder rod into shaft and link assembly (Figure 14-4, #13). Reinstall the pivot pin (Item #35).
3. Reattach hoses. Tighten retaining nuts on the hose fittings.
4. Operate floor lock several times and check for leaks.
5. Adjust according to "Floor Lock Linkage and Switch Adjustment" procedure in this Section.

» Floor Lock, Foot End, Left (Looking at Base from Foot-End)

Refer to Figure 14-3 unless otherwise noted.

• Removal

1. Remove shroud as described at the beginning of Section 12.
2. Unlock (raise) floor locks so that there is no pressure on them.
3. Detach hydraulic hoses from the two elbow fittings on the cylinder noting the punch of each hose.
4. Remove the power supply assembly as outlined in "Power Supply Assembly Replacement," in this Section.

5. Use a hammer and punch to remove the pivot pin or remove O-rings where used.
6. Unscrew cylinder rod from shaft and link assembly using an allen wrench
7. Remove cylinder from base.
8. Remove fittings from cylinder
9. Wipe fittings and put them on a lint-free cloth until reuse.

• **Replacement**

1. Remove new cylinder from plastic bag and install fittings (from old cylinder) on new cylinder orienting them as closely as possible to the correct position.
2. Tighten cylinder rod into the shaft and link assembly (Figure 14-4, #13). Reinstall the pivot pin (Item #35).
3. Reattach hoses. Tighten retaining nuts on the hose fittings.
4. Operate floor lock several times and check for leaks.
5. Adjust according to "Floor Lock Linkage and Switch Adjustment" procedure in this Section.

» **Floor Lock, Head End**

Refer to Figure 14-3, unless otherwise noted.

• **Removal**

1. Remove shroud as described in at the beginning of this Section.
2. Unlock (raise) floor locks so that there is no pressure on them.
3. To remove this cylinder it is necessary to remove the counterweight from the table base.
4. Remove two screws and lock washers holding the counterweights to the table base.
5. Remove the counterweight from the table base.
6. Remove all hydraulic hoses.
7. Use a hammer and punch to remove the pivot pin or remove O-rings where used.
8. Unscrew cylinder rod from shaft and link assembly using an Allen wrench.
9. Remove cylinder from base.
10. Remove fittings from the cylinder.
11. Wipe fittings and put them on a lint-free cloth until reuse.

• **Replacement**

1. Remove new cylinder from plastic bag and install fittings (from old cylinder) on new cylinder orienting them as closely as possible to correct position
2. tighten cylinder rod into shaft and link assembly. Reinstall pivot pin.
3. Reattach hoses. Tighten retaining nuts on the hose fittings.
4. Operate floor lock several times and check for leaks.
5. Reinstall counterweight.

» Back Section Cylinders

Refer to Figures 14-13, 14-14, and 14-18.



CAUTION: Do not remove back section cylinder without supporting back section. Limit switch will be damaged if back section drops too much.

• Removal

1. Insert a 2x4 between back and seat section and lower back section until board is wedged in place.
2. Remove back section tabletop.
3. Remove side rail.
4. Remove kidney-bridge linkage as follows:
 - a. Tap out groove pin (Figure 14-13, #38) from universal joint (Figure 14-18, #19) connecting kidney bridge handle shaft to kidney bridge shaft assembly.
 - b. Remove two round head screws and lock washers (Figure 14-13, #37 and #36) holding brass support block (Figure 14-18, #18) in place.
 - c. Remove two socket head cap screws and lock washers (Figure 14-13, #34 and 35) from the kidney bridge linkage block (Figure 14-18, #16).
 - d. Lift linkage assembly up and out of the way.
5. Remove set screw (Figure 14-13, #28) from underside of saddle block.
6. Remove pivot pin (Figure 14-13, #27) from saddle block.
7. Remove two socket head cap screws and lock washers (Figure 14-14, #7 and #8), holding cylinder bracket (Figure 14-14, #4) to back section casting.
8. Remove ground lead.
9. Disconnect and cap all three hydraulic hoses, marking them for reattachment.
10. Lift cylinder up and out of casting.
11. Wipe up any fluid that may have leaked from hoses/fittings.

• Replacement

1. Place new cylinder into back section casting.
2. Attach all three hoses, making sure hoses are connected to appropriate port as marked during removal.

NOTE: When attaching hoses, hold nut on hard line coming from cylinder and tighten fitting. Do not overtighten.

3. Reattach hose bracket.
4. Replace two screws and lockwashers (Figure 14-14, #7 and #8), attaching cylinder to back section casting.

NOTE: New cylinder is retracted. To extend cylinder rod, **BACK UP** function must be activated.

5. Turn power on. Raise back section slightly to extend new cylinder rod until hole in clevis lines up with hole in saddle block.

6. Insert pivot pin (Figure 14-13, #27). It may be necessary to jiggle back section slightly. Do not force pin - it should slide in.
7. Replace set screw (Figure 14-13, #28).
8. Remove 2x4 wedge and operate the UP/DOWN function to check cylinder for leaks.
9. Reinstall ground wire, kidney bridge linkage and side rail.

NOTE: Procedure for other back-section cylinder is the same, except there is no kidney bridge linkage.

» Leg Section Cylinders

Refer to Figures 14-13, 14-15, and 14-16.

• Removal

1. Remove seat and leg section tabletops.
 2. Remove seat section siderail.
 3. Remove two socket flathead screws (Figure 14-16, #5) from end frame cap.
- NOTE: Do not remove set screw on bottom outside of end frame cap assembly as this will hold pivot pin (Figure 14-13, #19) to leg assembly after removal.*
4. Remove the two set screws on the inside edge of end frame cap assembly, top (Figure 14-13, #33) and bottom (Figure 14-13, #20).
 5. Using a special screw (P-90696-061), screw into hole on inner end-frame cap plate (Figure 14-16, #1) and turn to loosen cap plate.
 6. Remove inner end-frame cap plate.
 7. Remove the sleeve bearing and thrust washer (Figure 14-13, #22 and #21) from pin (Figure 14-13, #19).
 8. Pulling outward, remove leg section (with pin attached) from seat section.
 9. Tap out top pivot pin (Figure 14-13, #18) from outside toward inside.
 10. Reflex table enough to gain access to two cap hex-head screws (Figure 14-15, #17) holding cylinder (Figure 14-15, #2) to seat section casting.
 11. Using Chapman set, remove two screws and washers (Figure 14-15, #17 and #18). Remove shims (Figure 14-13, #8 and #9).
 12. Lower seat section to vertical position.
 13. Carefully lift cylinder up and out of seat-section casting.
 14. Remove hoses, marking ports for reattachment. Ports are marked on cylinder manifold ... mark hoses accordingly.

- **Replacement**

1. Hand tighten hydraulic hoses in place as marked during removal. Then snug them down.
2. Place hydraulic cylinder in seat section casting.
3. Insert cap hex head screws and washers (Figure 14-15, #17 and #18) through seat section casting. Insert shims (Figure 14-15, #14 and #15) between casting and cylinder block.
4. Tighten screws into cylinder block using Chapman set
5. Align hole in input link with hole in casting. Reinstall pivot pin (Figure 14-13, #18) through input link and casting.
6. Reattach leg section, making sure pin (Figure 14-13, #19) is inserted through hole in coupler link. Slip sleeve bearing and thrust washer (Figure 14-13, #22 and #21) onto pin (Figure 14-13, #19).
7. Replace end frame inner cap plate (Figure 14-19, #1), using rubber mallet to snug down to seat section casting.
8. Replace and tighten set screws at top side (Figure 14-13, #33) and underside (Figure 14-13, #20) of end-frame cap assembly.
9. Adjust leg section movement and tighten set screw on locking collar of cylinder.

» **Seat Section Cylinder** Refer to Figure 14-9.

• **Removal**

1. Lower shroud.
2. Place 2x4 between seat section frame and saddle block. Lower table until it just touches 2x4 ... just enough to take pressure off cylinder ... so that seat frame is resting on 2x4.
3. Remove hydraulic hoses from cylinder (Item #4), marking for reattachment.
4. Remove socket head cap screws (Item #20) from brass pivot mounting pads (Item #8) (two in each pad).
5. Remove mounting pads from cylinder (notice how they are placed with punch marks toward foot section).
6. Loosen jam nut (Item #31) holding cylinder rod to cylinder knuckle (Item #32).
7. Hold cylinder with one hand while unscrewing cylinder rod from knuckle. Once cylinder is loose, lower it down and out of table base.

• **Replacement**

1. Screw new rod of new cylinder into knuckle.
2. Reattach mounting pads (Item #8) (with punch marks on pads toward leg section of table).
3. Start screws (Item #20) into mounting pads.
4. Attach hydraulic hoses, making sure they are connected to correct ports as marked during removal.
5. Lower seat section until mounting pads fit snugly against table frame (underside of skirt). Tighten screws into mounting pads.

» **Side Tilt Cylinder** Refer to Figure 14-9.

• **Removal**

1. Raise table to highest position.
2. Lower the shroud.
3. Position table in full right-side tilt, then in the reflex position.
4. Separate the two-piece shroud (Item #1).
5. Remove the two pipe plugs (Item #18) holding the clevis pins (Item #10) through the saddle and cylinder knuckle.
6. Drive the two clevis pins (from the seat section side) through the knuckle enough to release the side tilt cylinder. The cylinder should now be loose. Position the table into far right side tilt.
7. Position the table to full left side tilt to fully retract the cylinder.
8. Remove the hydraulic hoses (note each hose position), then place caps on the fittings.
9. Remove the two socket head cap screws and washers (Items #25, #26, and #28) holding the cylinder bracket to the column (Item #6).
10. Tap bracket (from behind) to move it off of the locating pin.

11. Pull the cylinder down and away from the table. Be careful not to pull out any electrical plugs.
12. Remove the set screw (Item #30) holding the pivot pin (Item #24) out of the bracket.
13. Use a large punch to tap the pivot pin out of the bracket.

NOTE: Pin is inserted with interference fit, so it may be difficult to tap out.

14. Remove the fittings from the cylinder.

• Replacement

1. To replace the cylinder, follow the "removal" procedure in reverse order.

Hydraulic Valve Replacement Procedures

» S1 through S8

Refer to Figures 14-24 and 14-26. There are 10 hydraulic valves on the column. S1 through S8 are spool-type valves, and S9 and S10 are cartridge-type valves. There are also three hydraulic valves on the hydraulic pump assembly. S11 and S12 are spool-type valves, and S13 is a cartridge-type valve.

Refer to Figure 14-24.

IMPORTANT: Removing the valve causes some hydraulic fluid leakage. Have a lint-free cloth available to catch any leakage.

1. Disconnect AC Power.
2. Remove shroud as described at the beginning of Section 12.
3. Raise table to the maximum height.
4. To support the raise/lower mechanism, insert a screwdriver through the access hole at the back of the column. Slowly lower table until it contacts screwdriver.
5. Position table in sufficient left-side tilt to access the table control board mounting screws.
6. P4 needs to be removed to access the lower mounting screws.
7. Gently reposition the table control board to gain access to the valve coils located behind the table control board.
8. Remove the coil jam nuts (19 mm) from the desired pair of spool valves.
9. Slide the coil off of both the left and right side of the manifold assembly.
10. Loosen each solenoid housing using a deep socket (24 mm). With the lint-free cloth under each housing to catch any leakage, unthread each housing by hand and remove from the valve manifold.
11. Wipe up any spillage.
12. Remove solenoid stem on the control board side by sliding stem off the valve slide.
13. Remove the washer and pressure spring.
14. Remove solenoid stem and slide by pulling right stem out of the manifold block.
15. Inspect the plunger for wear and replace as necessary.
16. To replace the valve, reverse this procedure.



CAUTION: When replacing solenoid valves, carefully remove retaining washer and pressure spring to prevent washer and spring from quickly expelling from the valve block.

» **S9 and S10** Refer to Figure 14-24.



CAUTION: Use care when unthreading solenoid valve housing from the valve manifold. Plunger is equipped with a spring which may expel from the housing upon removal of the plunger housing.

1. Disconnect the AC Power.
2. Remove the shroud as described at the beginning of Section 12.
3. Raise the table to its maximum position.
4. To support the raise/lower mechanism, insert a screwdriver through the access hole at the back of the column. Slowly lower table until it contacts screwdriver.
5. Position table in sufficient left-side tilt to access the table control board mounting screws.
6. Remove the jam nut (19 mm) holding the solenoid coil.
7. Remove coil and position it out of the way.
8. Loosen each solenoid housing using a deep socket (24 mm). With the lint-free cloth under each housing to catch any leakage, unthread each housing by hand and remove from the valve manifold.
9. Remove the pressure spring from the plunger.
10. Remove the plunger by sliding it off of the spool.
11. Replace the spool, O-ring, plastic seat, and brass washer as necessary, noting the orientation of each.
12. When reinstalling the spool, O-ring, plastic seat, and brass washer, be sure that they are reassembled in the plunger housing as a unit and in the proper order before installing the plunger housing.
13. To replace the valve, reverse this procedure.

» **S11 and S12** Refer to Figure 14-26.

1. Remove the front base shroud.
2. Remove the front battery (closest to the counterweight) as described in Section 12.
3. Remove the jam nuts (19 mm) from both solenoids (S11 and S12).
4. Slide the coil off of both the left and right sides of the manifold assembly.
5. Loosen each solenoid housing using a deep socket (24 mm). With a lint-free cloth under each housing to catch any leakage, unthread each housing by hand and remove from the valve manifold.
6. Wipe up the spillage.
7. Remove the solenoid stem on the control board side by sliding the stem off of the valve slide.
8. Remove the washer and pressure spring.
9. Remove the solenoid stem and slide by pulling the right stem out of the manifold block.
10. Inspect the plunger for wear and replace as necessary.
11. To replace the valve, reverse this procedure.

» **S13** Refer to Figure 14-26.

1. Remove the front base shroud.
2. Remove the jam nut (19 mm).
3. Remove and replace the cartridge assembly using a 24-mm wrench.
4. Reinstall in reverse order.

**Replacement of
Valves in Fittings**

NOTE: Hold a lint-free cloth under fittings when loosening and removing.

Before beginning any of the following fitting procedures, perform the following steps:

1. Remove the shroud as described at the beginning of Section 12.
2. Raise the table to its maximum height.
3. Support the raise/lower mechanism by inserting a screwdriver through the access hole on the back of the column. Slowly lower the table until it contacts the screwdriver.

» **Check Valves**

Refer to Figure 14-24.



CAUTION: Failing to secure a tabletop section will result in sudden lowering of that section.

1. Identify appropriate check valve to be replaced.
2. Secure the top section requiring the check valve replacement to:
 - a. Keep the section from falling when hydraulic line is opened.
 - b. To minimize fluid loss.
 - c. Reduce the changing time.
3. Loosen and remove the banjo fitting bolt using a 14-mm wrench. Note the position of the banjo fittings seals.
4. Remove the check valve cartridge from the manifold using a 17-mm wrench.
5. Remove the check valve spring and ball.
6. Replace and reassemble in reverse order.

**PC Board
Replacement**

Refer to Figure 14-3 unless otherwise noted.

» **Table Control PC Board
Assembly**

1. Lower table to lowest position.
2. Remove four cap hex socket head screws (Figure 14-1, #5) securing upper shroud (Figure 14-1, #4) to shroud cap assembly.
3. Lower shroud pieces.
4. Raise table to maximum height and put it in full left-side tilt to gain access to top screw (Item #16) holding PC board assembly (Item #27) in place.
5. Unplug cable plugs from bottom of PC board assembly.

6. Remove cable ties from side and bottom of PC board assembly.

Note: Washers are installed in sequence. Before removing screws holding PC board assembly in place, note sequence and reinstall in same manner.

7. Remove the top screw (Item #16), wire shield (Item #30), and washers (Items #26, #28, and #29) holding PC board to column.

8. Remove the bottom screw (Item #16) and washers (Items #26, 28 and 29) holding PC board to column.

9. Remove PC board.

10. Attach new PC board assembly to column.

NOTE: Plugs P28 and P29 look alike but are not interchangeable. Check the cable indicators to make sure they are plugged into PC board properly.

11. Attach cable plugs.

12. Attach all cable ties to the board assembly, side and bottom.

13. Verify jumpers on control board.

» **Override Switch PC Board Assembly**

Refer to Figure 14-10 unless otherwise noted.

1. Lower table to lowest position.

2. Remove four cap hex sockethead screws (Figure 14-1, #5) securing upper shroud (Figure 14-1, #4) to shroud cap assembly.

3. Lower shroud pieces.

4. Raise table to maximum height.

5. Unscrew and remove the red toggle boot seal (Item #10) and the four grey toggle boot seals (Item #11) holding switch assembly on skirt.

6. Remove the five nuts holding switch assembly on skirt.

7. Back switch assembly out of holder, being careful not to lose lockwashers.

8. Install new assembly in reverse order, making sure lockwashers are in place between switch plate and skirt.

» **Override Control PC Board Assembly**

Refer to Figure 14-3 unless otherwise noted.

1. Lower table to lowest position.

2. Remove four cap hex sockethead screws (Figure 14-1, #5) securing upper shroud (Figure 14-1, #4) to shroud cap assembly.

3. Lower shroud pieces.

4. Raise table to maximum height.

5. Remove P9/P10 cable assembly

6. Remove four screws and lockwashers holding override box assembly (Item #44) to saddle.

6. Disconnect P8 and P9 cable assemblies.

7. Remove assembly from table.

8. Install new assembly in reverse order.

» Power Control PC Board

⚠ WARNING - ELECTRIC SHOCK HAZARD: Before replacing PC boards or power supply assembly, disconnect all power sources; i.e., wall plug, control battery, and (if a battery-operated table) the motor battery positive terminal.

Refer to Figure 14-4 unless otherwise noted.

1. Remove shroud as described at the beginning of Section 12.
2. Remove two screws (Item #41) and lockwashers (Item #42) holding power supply assembly cover in place. The power control PC board (Item #43) is on the underside of this cover.
3. Lift cover and tilt back.
4. Disconnect plugs P5 and P6.
5. Turn cover over. Carefully slip PC board off nylon standoffs, five places.
6. Press new board onto standoffs, making sure board is firmly snapped into place.
7. Reattach plugs P5 and P6.
8. Reattach cover to power supply assembly using two screws (Item #41) and lockwashers (Item #42).

Power Supply Assembly Replacement

⚠ WARNING - ELECTRIC SHOCK HAZARD: Before replacing PC boards or power supply assembly, disconnect all power sources; i.e., wall plug, control battery, and (if a battery-operated table) the motor battery positive terminal.

⚠ CAUTION: When reinstalling power supply assembly, be aware of table-lock microswitch wires (blue twisted pair wire numbers 80 and 81; see Figure 14-20B, #109). Handle carefully to avoid breaking solder connections.

Refer to Figure 14-4 unless otherwise noted.

1. Remove shroud as described at the beginning of Section 12.
 2. Remove two screws (Item #41) and lockwashers (Item #42) holding power supply assembly cover in place.
 3. Lift cover and tilt back.
 4. Disconnect plugs P5 and P6 and set cover aside.
 5. Remove two screws (Item #36) and lockwashers (Item #35) on inside of module, holding module to base.
 6. Disconnect all electrical wires to module (P17, P18, P19, P20, and P23).
 7. Lift module off base.
- NOTE: When reinstalling P6, make sure no wires have pulled out of plug. Check all wire connections.*
8. Make wire connections and re-attach module to base.
 9. Replace cover and fasten in place.


Battery Removal/ Replacement


1. With the AC power removed, disconnect the four battery terminal wires and note their positions for re-connection.
2. Remove the two 8x32 nut and screw combinations from each end of the motor battery bracket.
3. Gently lift and remove the battery.
4. Replace or reinstall battery by following procedure steps in reverse order.

Motor Battery Charger Module Replacement (Battery-Operated Tables Only)

Refer to Figure 14-2 unless otherwise indicated.

1. Remove the shroud as described at the beginning of Section 12.
2. Refer to "Power Supply Assembly Replacement" procedure in this Section to gain access to P19 and P20.
3. Remove the two sems screws (Item #9) and lockwashers (Item #11) holding battery charger module in place.
4. Carefully move cable assemblies out of the way.
5. Disconnect P19, P20 and P21.
6. Lift module up and out of table base, being careful not to dislodge any wire connections.
7. Make wire connections (P19, P20 and P21) from new module.
8. Lower module into table base.
9. Secure module in place with two sems screws (Item #9) and lockwashers (Item #11).
10. Replace power supply module as described in "Power Supply Assembly Replacement" procedure in this Section.

 **WARNING - ELECTRIC SHOCK HAZARD:** Before replacing PC boards or power supply assembly, disconnect all power sources; i.e., wall plug, control battery, and (if a battery-operated table) the motor battery positive terminal.

 **CAUTION:** When reinstalling power supply assembly, be aware of table-lock microswitch wires (blue twisted pair wire numbers 80 and 81; see Figure 14-20B, #109). Handle carefully to avoid breaking solder connections.

Transformer Replacement

⚠ WARNING - ELECTRIC SHOCK HAZARD: Before replacing PC boards or power supply assembly, disconnect all power sources; i.e., wall plug, control battery, and (if a battery-operated table) the motor battery positive terminal.

⚠ CAUTION: Handle wire cables carefully, making sure they do not become hung up in other components, and that wires do not pull out of plugs.

Refer to Figure 14-4 unless otherwise indicated.

1. Remove shroud as described at the beginning of Section 12.
2. Remove two screws (Item #39) and lock washers (Item #38) holding transformer (Item #10) to table base.
3. Disconnect P19, P20 and P21.
4. If a battery-operated table, remove battery charger module as described in "Motor Battery Charger Module Replacement" procedure in this Section.
5. Disconnect P26 and P23.
6. Carefully lift transformer up and off of table base.

IMPORTANT: When installing new transformer, make sure no connectors become lodged between hydraulic hoses.

7. Place new transformer on table base.

NOTE: To orient transformer properly, be sure P23 connection is facing the power supply assembly.

8. Connect all cables.
9. If a battery-operated table, reinstall battery charger module.

Manual Pump Priming Procedure

Refer to Figure 14-6 unless otherwise indicated.

1. Remove hose clamp (Figure 14-23, #18) and tube from the reservoir fitting.
2. Use a clean 500-ml wash bottle (or equivalent) of hydraulic oil and fill the tube with oil.
3. Reinsert tube (now filled with fluid) into the reservoir fitting.
4. Pump the foot pump pedal several times. Oil should flow in the tube when the pump pedal is returning. If oil is not flowing, pour hydraulic fluid directly into pump using the following method:
 - a. Remove check valve (Item #17) from hydraulic fitting (Item #18).
 - b. Fill pump body (Item #3) with fluid and reattach check valve.
 - c. Repeat steps 2, 3 and 4.
5. Fasten hose clamp.
6. Pump the pedal repeatedly, noting if oil is flowing through the tube from the reservoir to the pump.

If oil is flowing in the tube, continue pumping pedal until it becomes hard to pump and the tube is completely filled with oil. If oil is not flowing in the tube, repeat steps 1-6 above.
7. Disconnect electric line to the hydraulic pump motor. Using the hand control and the manual pump, articulate each table function to check its operation.
8. Reconnect electric line to the hydraulic pump motor.

Column Lubrication

Refer to Figure 14-7 unless otherwise indicated.

1. Lower shrouds.
2. Raise table until top of stage block is above top of guide shaft (Item #4). See "Ref. A" on Figure 14-7.
3. Pour one tablespoon of Chevron 680 oil down each slot. This flows to the oiler (Item #5), lubricating the bearings (Item #6).

Reservoir Filling

NOTE: Use only 3080 Series table oil (P-764322-636) when adding oil to or refilling reservoir.

1. Remove shrouds as described at the beginning of this Section.
2. Raise table to maximum height.
3. Clean area around reservoir cap and then remove cap.
4. Add oil to the "FULL" level indicator on dipstick attached to cap.
5. Replace cap.

Field Resetting of Voltage Switches

NOTE: This procedure will typically be used by service personnel outside of North America.



CAUTION: Before field-resetting of voltage switches, disconnect table from any external AC power source.

1. Raise tabletop to maximum height as follows:
 - If battery-powered and operable, use hand control in normal fashion.
 - If electric-powered (or battery-operated and batteries are discharged), use hand control and manual foot pump.
2. Remove shrouds as described at the beginning of this Section.

NOTE: A special Allen wrench (P-764322-952) is required to gain access to the voltage plugs.

3. The voltage tap switches (two on electric table; three on battery-operated table) are under switch covers (Figure 14-2, #13; Figure 14-4, #49). Use the Allen wrench to remove tamper-proof screws (Figure 14-2, #12; Figure 14-4, #48) and switch covers.
4. Change plugs to the proper setting.
5. Replace switch covers and screws.
6. Check that table fuses (F1, F2, F3 and F4 - battery-operated tables only) are of the proper voltage as listed in Table 12-1.
7. Replace table base and column shrouds.

⚠ WARNING - DISPOSAL HAZARD: This product contains materials which may require disposal through appropriately licensed and permitted hazardous waste management firms.

The following materials are contained within the Amsco® 3085 SP™ Table. When disposing of the table or its parts, ensure the proper disposal of hazardous and other regulated waste in compliance with federal, state, and local regulations.

- **Lead (Pb) Weight** — solid weight (P-146653-460, quantity = 1) located in the table base at the narrow end. Approximate weight = 90 lbs (41 kg).
- **Lead Acid (Pb/H₂SO₄)** — gelled cell batteries (P-93908-637, quantity = 2 and P-136806-806, quantity = 2 battery-powered table only) located in the table base in the narrow end. Approximate weight = 39 lbs (14 kg)
- **Mercury (Hg)** — in sealed glass tube electrical switches, contained in RTV potted Return-to-Level switch assemblies (P-136807-726, P-136807-727, and P-136807-728). Quantity = 3 assemblies per table (two mercury switches per assembly). Two assemblies are located in the back section frame and one assembly is located in the seat section frame. Approximate total mercury per table = 18 grams.
- **Hydraulic Oil** — Chevron AW32 or equivalent (P-150823-197, service part P-764322-636). Oil is in the hydraulic components located in the base, on the column, in the seat section, in the back section, inside the column, and in all the hydraulic system lines and hoses. Approximate quantity = 0.9 US gallons (3.4 litres).
- **Gear Compound** — Chevron grade 680, located in the oiler pads in the column. Approximate amount = 1 ounce (28 grams).
- **Lead (Pb) in Solder** — contained in solder on circuit boards and in some miscellaneous wire connections. Minute amounts.
- **Electronic and Electrical Parts** — not known to require special disposal methods at date of this manual.
- **Metal Parts** — made from aluminum (Al), steel (Fe), cast iron (Fe), copper (Cu), and copper alloys (Cu/x), plastic, synthetic rubber, plating (Cr, Ni, Zn, Au), and adhesives not known to require special disposal methods at date of this manual.

Significant assemblies and components of the Amsco® 3085 SPT™ Surgical Table are illustrated and identified in this section. The part number, the description, and the quantity required for each usage are given. Each indentation in the description represents the assembly level. The UNITS PER ASSEMBLY column is specific for the given assembly or subassembly level.

How to Use the Illustrated Parts Breakdown

1. Determine the function and application of the part required. Refer to the List of Illustrations and select the most appropriate title. Note the illustration page number.
2. Turn to the page indicated and locate the desired part on the illustration.
3. From the illustration, obtain the item number assigned to the desired part. Refer to the accompanying description for specific information regarding the part.

Special Instructions

Table 14-1 provides part numbers and figure references for the most commonly replaced items on a 3085 SP table. It is for quick reference only. For a complete listing of parts, refer to the appropriate illustrated parts breakdown in this Section of the maintenance manual.

Table 14-1. Amsco® 3085 SP™ Parts – Quick Reference Guide

	Description	Part Number	Reference
Hydraulic Cylinders	Leg, Left	P-141210-145	Figure 14-22, Item 10
	Leg, Right	P-141210-146	Figure 14-22, Item 9
	Back, Left	P-134469-132	Figure 14-22, Item 12
	Back, Right	P-134469-131	Figure 14-22, Item 11
	Seat	P-134469-133	Figure 14-22, Item 7
	Side Tilt Cylinder	P-141210-108	Figure 14-22, Item 8
Circuit Boards	Table Control Board	P-146655-481	Figure 14-3, Item 27
	Override Board	P-141210-139	Figure 14-3, Item 44
	Power Supply Assembly	P-136807-103	Figure 14-4, Item 40
	• Power Control PC Board	P-760265-598	Figure 14-4, Item 43
	Battery Charger (Motor Only)	P-146653-939	Figure 14-2, Item 7
Kits	Hydraulic Oil Kit	P-764322-636	Figure 14-25, Item 3
	Hand Control, Domestic	P-141210-318	Figure 14-11, Item 35
	• Hand Control Cord Replacement Kit	P-764328-571	Figure 14-11, Item 35
	• Hand Control Circuit Board	P-764325-633	Figure 14-11, Item 35
	• Hand Control Housing Kit	P-764328-572	Figure 14-11, Item 35
	Touch-up Paint (Dark Gray, 12-oz can)	P-764319-808	Table 2-1
	Touch-up Paint (Off White, 60 cc)	P-150824-607	Table 2-1
	Foot Control Switch Kit	P-764326-690	Table 14-1
	Foot Control Cord Kit	P-764326-689	Table 14-1
	Check Valve Kit	P-150823-727	Figure 14-24, Item 10
	Reservoir Replacement Kit	P-150823-864	Figure 14-25, Item 3
	Lift Cylinder Ram Seal Kit	P-764324-901	Figure 14-8
	Column Seal Spanner Wrench	P-764324-884	Figure 14-8, Item 10
	Floor Lock Cylinder, Foot End, #2	P-56397-275	Figure 14-22, Item 4
	Floor Lock Cylinder, Foot End, Left	P-56397-274	Figure 14-22, Item 3
	Floor Lock Cylinder, Head End, #3	P-56397-275	Figure 14-22, Item 4
Documentation	Uncrating Instructions	P-150830-028	--
	Operator Manual , English	P-150830-026	--
	Operator Manual, French	P-150829-090	--
	Operator Manual, Spanish	P-150829-091	--
	Operator Manual, German	P-150829-092	--
	Table/Accessory Video - How to Use*	VI-1012	--

* Must be purchased through STERIS Service Technicians only.

Table 14-1. Amsco 3085 SP Parts – Quick Reference Guide (Continued)

Adhesives	Description	Part Number	Reference
	Loctite 222	R-005300-545	A/R
	Loctite 262	R-005300-890	Figure 14-9
	Loctite 271	R-005300-548	A/R
	Override Cover Adhesive	P-150830-031	Figure 14-10, Item 16
	KIT, Velcro Adhesive	P-764325-933	Figure 14-11

Illustrated Parts Breakdown

Figure	Title	Page
14-1	Shroud Assembly	14-4
14-2	Table Base Assembly (Part 1 of 3)	14-6
14-3	Table Base Assembly (Part 2 of 3)	14-8
14-4	Table Base Assembly (Part 3 of 3)	14-12
14-5	AC Plate Assembly	14-16
14-6	Foot Pump Assembly	14-18
14-7	Column Assembly (Part 1 of 2)	14-20
14-8	Column Assembly (Part 2 of 2)	14-22
14-9	Table Saddle/Skirt Assembly	14-24
14-10	Shroud Cap Assembly	14-26
14-11	Table Tops and Side Rail Assembly	14-28
14-12	X-ray Top Assemblies	14-30
14-13	Tabletop Assembly	14-32
14-14	Back Section Assembly	14-34
14-15	Seat Section Assembly	14-36
14-16	Leg Section Assemblies	14-38
14-17	Headrest Assembly	14-40
14-18	Kidney Bridge Shaft Assembly	14-42
14-19	Kidney Bridge Handle Assembly	14-44
14-20A	Table Base and Column: Electrical Assembly (Part 1 of 2)	14-46
14-20B	Table Base and Column: Electrical Assembly (Part 2 of 2)	14-47
14-20C	Table Base and Column: Electrical Assembly – HERMES-Ready (Electric and Battery)	14-48
14-21	Electric-to-Battery Conversion	14-50
14-22	Hydraulic Components Layout	14-52
14-23	Table Base and Column: Hydraulic Assembly	14-54
14-24	Control Block Assembly	14-56
14-25	Motor and Pump Assembly	14-58
14-26	Valve Box IV	14-60

FIG. & INDEX NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-1-					SHROUD ASSEMBLY	X			
1	P	141210	086	*	ASSEMBLY, Base Shroud	1			
2	P	146653	528		SHROUD, Bottom Intermediate	1			
3	P	146653	459		SHROUD, Top Intermediate	1			
4	P	146653	458	*	UPPER SHROUD, w/o Labels	1			
5	P	129360	882		SCREW, Cap. Hex Sockethead, #10-24 x 3/8	4			
6	P	3967	041		SCREW, Machine Roundhead, #8-32 x 1/4	2			
7	P	2960	042		NUT, Hex #10-32	1			
8	P	124361	031		LOCKWASHER, External Tooth #10	1			
9	P	93909	734		LABEL, Manual Pump (Not Shown)	1			
10	P	56397	351		LABEL, Caution "Do Not Use For Storage" (Not Shown)	1			
	P	56397	351		LABEL, Caution "Do Not Use For Storage" (French, 220V)	1			
	P	56401	599		LABEL, Caution "Do Not Use For Storage" (Spanish, 220V)	1			
	P	56401	600		LABEL, Caution "Do Not Use For Storage" (German, 220V)	1			
11	P	141210	326		LABEL, Warning	1			
12	P	134469	352		LABEL, 3085 SP Logo (Battery) (Not Shown)	2			
	P	134469	351		LABEL, 3085 SP Logo (Electric) (Not Shown)	2			
	P	56397	703		LABEL, HERMES-Ready (Not Shown)	2			
13	R	7200	030		TAPE - Used on Shroud Clips (Roll) (Not Shown)	1			
14	P	129360	240		PACKING KIT (Not Shown)	1			
	P	141210	129		• RAMPS (Not Shown)	1			
<p>* NOTE: Base Shroud (Item #1) and Upper Shroud (Item #4) DO NOT come with labels - labels must be ordered separately.</p>									

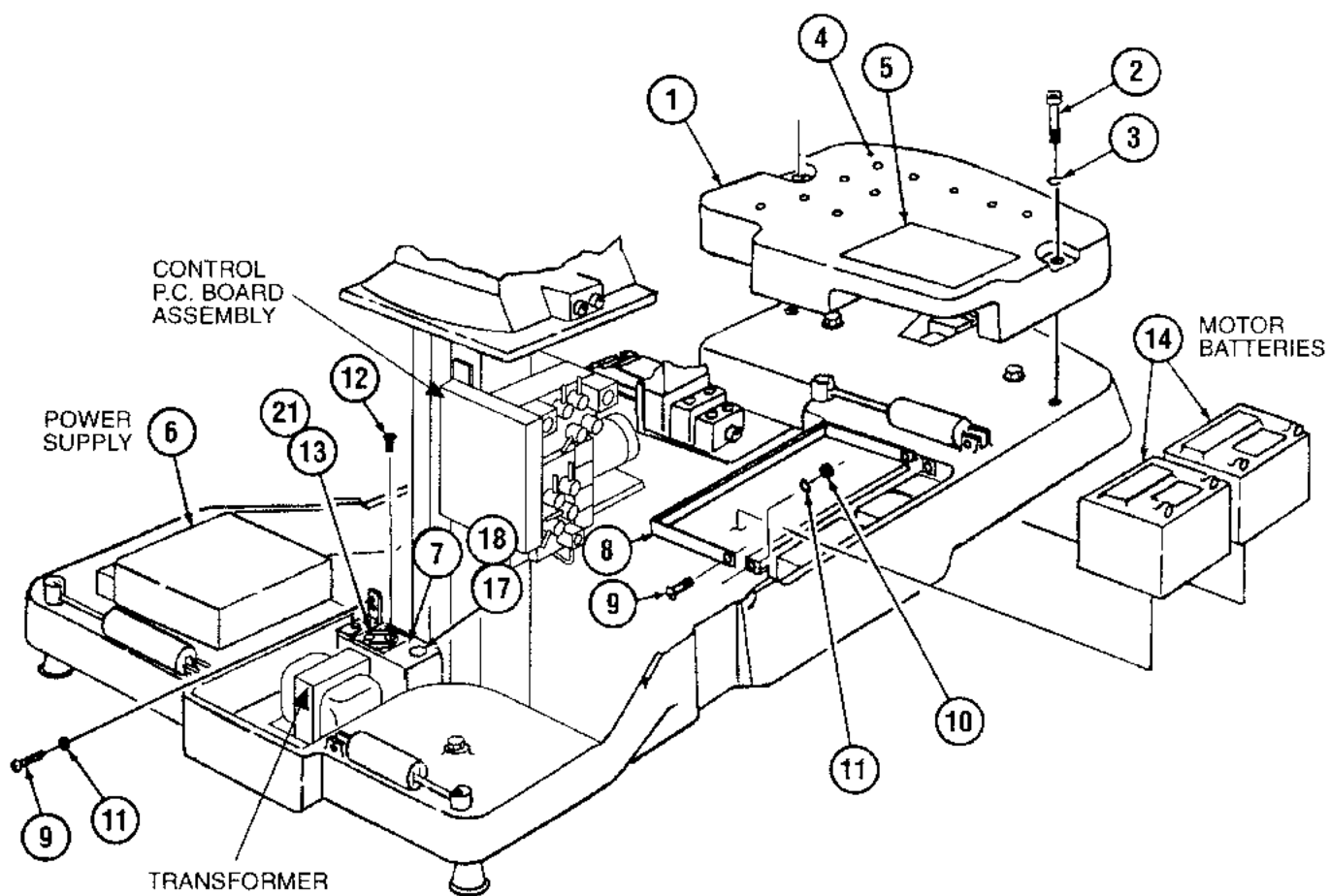


Figure 14-2. Table Base Assembly (Part 1 of 3)

FIG. & INDEX NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-2-	P				TABLE BASE ASSEMBLY - 3085 SP - (Part 1 of 3)				
					ELECTRIC UNIT	X			
					BATTERY UNIT		X		
	1	P	146653	460	COUNTERWEIGHT	1	1		
	2	P	129359	896	SCREW, Cap, Hex Sockethead, 3/8-16 x 3-1/4	2	2		
	3	P	19680	041	LOCKWASHER, 3/8	2	2		
	4	P	129360	481	BUMPON	A/R	A/R		
	5	P	136807	011	LABEL, Battery Replacement (Domestic, 120V)	1	1		
		P	134473	247	LABEL, Battery Replacement (French, 220V)	1	1		
		P	134473	248	LABEL, Battery Replacement (Spanish, 220V)	1	1		
		P	134473	249	LABEL, Battery Replacement (German, 220V)	1	1		
	6	P	146653	775	POWER SUPPLY, Electric Unit	1			
		P	136807	103	POWER SUPPLY, Battery Unit		1		
	7	P	146653	939	MODULE, Battery Charger (Motor)		1		
	8	P	93909	212	BRACKET, Battery Support (Coated)		1		
	9	P	93908	037	SCREW, Sems, #8-32 x 1/2		4		
	10	P	3153	041	NUT, Hex, #8-32		2		
	11	P	84114	003	WASHER, Flat, #8		4		
	12	P	129360	652	SCREW, Tamper-proof, #4-40 x 1/2		2		
	13	P	129360	653	COVER, Switch		1		
	14	P	136806	806	BATTERY, 12 V (Motor)		2		
	15	P	136807	036	ASSEMBLY, Cable, P25 to Battery (Not Shown)		1		
	16	P	93909	467	JUMPER, Motor Battery (Not Shown)		1		
	17	P	93909	444	FUSE, 1 AMP		1		
	18	P	93908	673	HOLDER, Fuse	1	1		
	19	P	129360	598	TIE, Cable (Not Shown)		4		
	20	P	93909	748	JUMPER, Wire, Program, P29 (Not Shown)		1		
	21	P	129360	525	DECAL, Fuse F4	1	1		

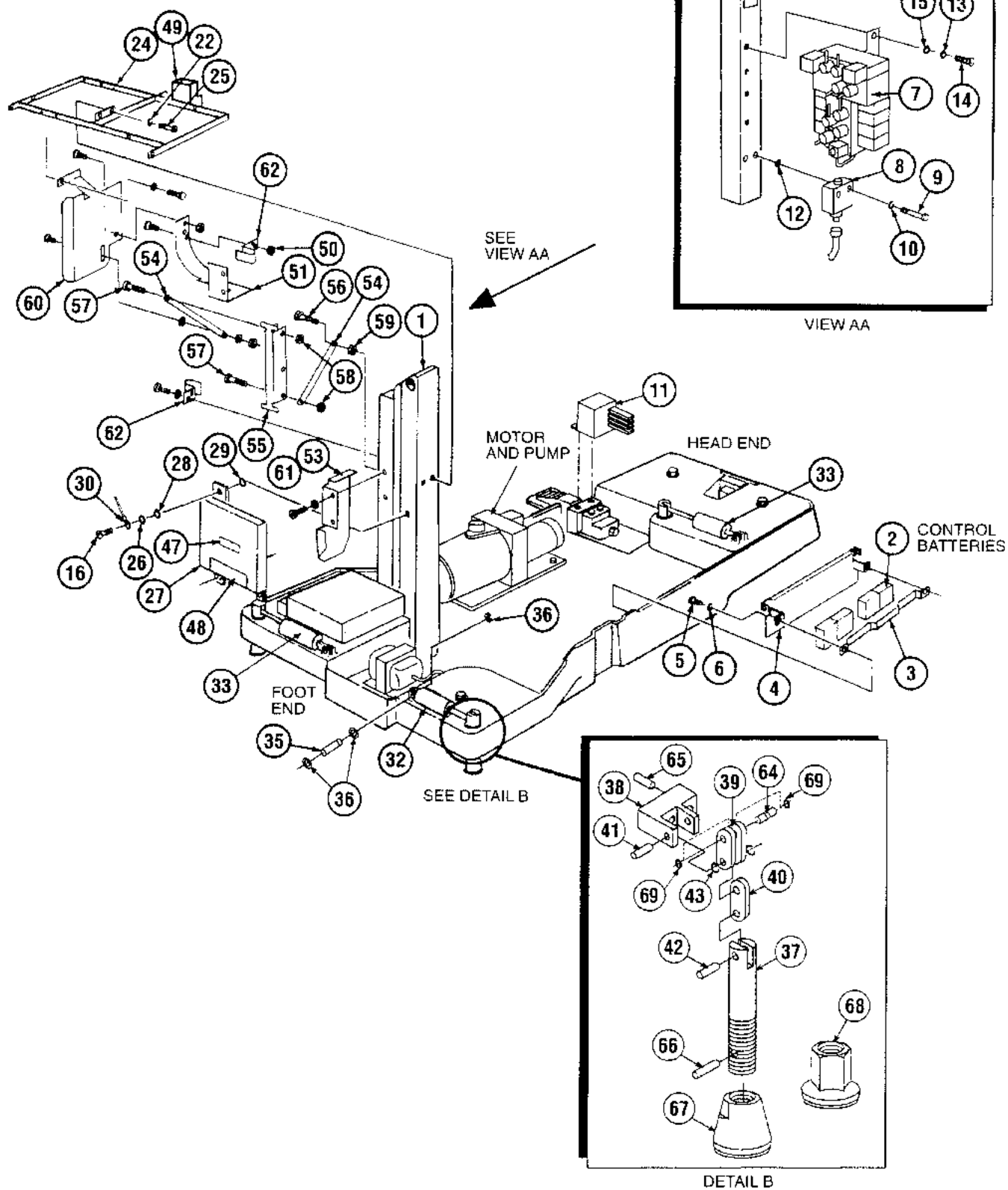


Figure 14-3. Table Base Assembly (Part 2 of 3)

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY
14-3-					TABLE BASE ASSEMBLY -- 3085 SP (Part 2 of 3)	X
1	P	146653	426		COLUMN ASSEMBLY (See Figure 14-7)	1
2	P	93908	637		BATTERY, Control	2
3	P	93909	283		STRAP, Battery Support	1
4	P	136806	807		PLATE, Battery Support	1
5	P	50527	061		SCREW, Cap, Hex Sockethead, #8-32 x 1/2	2
6	P	19676	041		LOCKWASHER, #8	2
7					ASSEMBLY, Control Block (see Figure 14-25)	1
8	P	134469	149		ASSEMBLY, Column Flange	1
9	P	91521	091		SCREW, Cap, Sockethead	2
10	P	26962	061		LOCKWASHER, 1/4, Internal Tooth	2
11					ASSEMBLY, Foot Pump (see Figure 14-6)	1
12	P	129359	667		O-RING	2
13	P	19677	041		LOCKWASHER, #10	4
14	P	41012	061		SCREW, Cap, Hex Sockethead, #10-32 x 1/2	4
15	P	17589	045		WASHER, Flat, #10	4
16	P	93908	037		SCREW, Sems, #8-32 x 1/2	2
17					Item # Not Used	
18					Item # Not Used	
19					Item # Not Used	
20					Item # Not Used	
21					Item # Not Used	
22					Item # Not Used	
23					Item # Not Used	
24	P	141210	147		SUPPORT, Shroud Mounting	1
25	P	37676	061		SCREW, Cap, Hex Sockethead, 1/4-28 x 5/8	2
26	P	84114	003		WASHER, Flat, #8	2
27	P	146655	481		ASSEMBLY, Control PC Board Housing	1
28	P	27324	091		WASHER, Flat, Nylon	2
29	P	129360	883		WASHER, Shoulder, Nylon	2
30	P	93909	782		SHIELD, Wire	1
31					Item # Not Used	
32	P				CYLINDER, Hydraulic #1, Floor Lock (see Figure 14-22)	1
33	P				CYLINDER, Hydraulic #2, Floor Lock (see Figure 14-22)	1
34	P	136807	035		ASSEMBLY, Floor Lock Limit Switch (Not Shown) (see Figure 14-20, Item #19)	1
35	P	129359	870		PIN, Cylinder Pivot	3
36	P	36836	091		RING, Retaining	6
37	P	93908	849	*	SHAFT, Floor Lock	1
38	P	93908	850	*	CLEVIS, Cylinder	1
39	P	129360	152	*	LINK, Pivot	2
40	P	129360	151	*	LINK, Shaft	1
41	P	129359	898	*	PIN, Link	1
42	P	129359	899	*	PIN, Shaft, 1/4 Diameter	1
43	P	47429	061	*	RING, Retaining, 1/4 Diameter	2
44	P	141210	139		ASSEMBLY, Override Control Board Box	1
45					Item # Not Used	
46					Item # Not Used	
47	P	93909	410		LABEL, Low Battery Indicator	1
48	P	93909	777		LABEL, Caution	1
49	P	134469	125		GUIDE, Hose	1
* Item #'s 37 - 43 can be replaced as a complete assembly by ordering P-93908-634 (left-hand shaft and link assembly) or P-93908-635 (right-hand shaft and link assembly). See Figure 14-4, items 13 and 14 for a pictorial.						

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-3-					TABLE BASE ASSEMBLY -- 3085 SP (Part 2 of 3, continued)	X			
50	P	118442	045		LOCKNUT	5			
51	P	134469	349		SUPPORT, Hose	1			
52					Item # Not Used				
53	P	141210	088		RETAINER	1			
54	P	93909	778		LINK, Hose Hanger	2			
55	P	93909	217		HANGER, Hose	1			
56	P	81667	003		SCREW, Machine Hex Head #10-32 X 1-1/4" Long	1			
57	P	27690	041		SCREW, Truss Head #10-24 X 3/4" Long	2			
58	P	8646	061		NUT, Hex #10-24	2			
59	P	2960	042		NUT, Hex #10-32	2			
60	P	136807	038		HOSE, Guide	1			
61	P	141210	088		HOSE, Guide Support	1			
62	P	56397	373		CLAMP, Hose	2			
63					Item # Not Used				
64	P	129359	900		PIN, Housing, 5/16 Diameter	3			
65	P	40848	061		SCREW, Set, Sockethead, 1/4-20 x 3/4"	2			
66	P	21504	091		CYLINDER, Rubber	3			
67	P	150199	001		FOOT	2			
68	P	150200	001		FOOT	1			
69	P	024699	091		RING, Retaining, 5/16 Diameter	4			

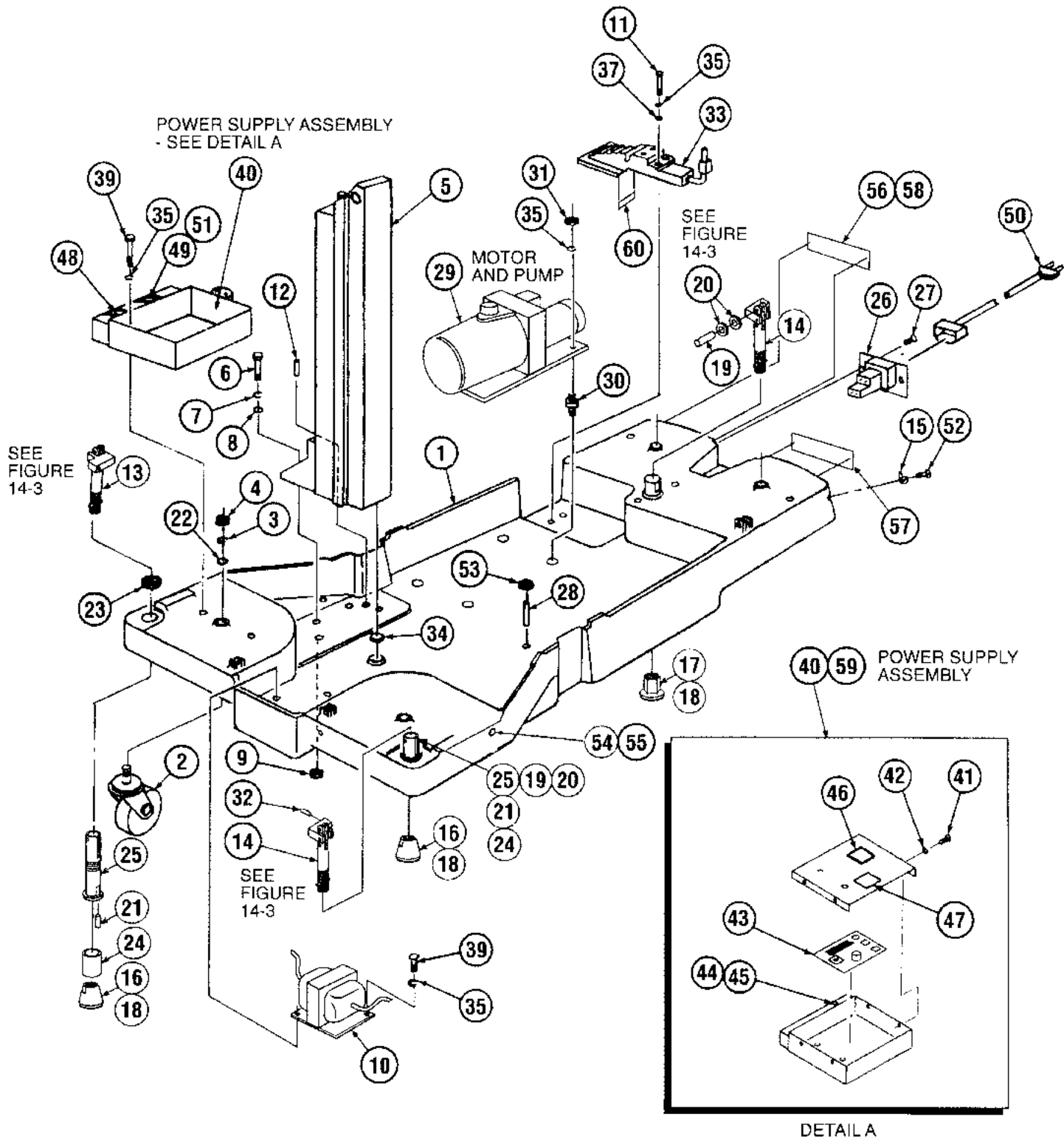


Figure 14-4. Table Base Assembly (Part 3 of 3)

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-4-					TABLE BASE ASSEMBLY - 3085 SP - (Part 3 of 3)	X			
1					BASE, Table	1			
2	P	56397	570		CASTER, Swivel, 1/2-13, Non, Conductive	4			
3	P	19681	045		LOCKWASHER, 1/2	4			
4	P	13397	041		NUT, Hex, 1/2-13	4			
5					ASSEMBLY, Column (see Figures 14-1 and 14-7)	1			
6	P	36633	001		SCREW, Cap, Hex Sockethead, 3/8-16 x 1-3/4	4			
7	P	19680	041		LOCKWASHER, Flat, 3/8	4			
8	P	10412	042		WASHER, Flat, 3/8	4			
9	P	129360	496		LOCKNUT, Uni-torque, 3/8-16	4			
10	P	136807	033		ASSEMBLY, Transformer, 24 Volt	1			
11	P	45613	091		SCREW, Cap, Sockethead, 1/4-20 x 1-1/2	2			
12	P	46156	061		PIN, Spring Roll, 5/16 Diameter x 3/4	2			
13	P	93908	635		ASSEMBLY, Shaft and Link, Right Hand (see Figure 14-3)	1			
14	P	93908	634		ASSEMBLY, Shaft and Link, Left Hand (see Figure 14-3)	2			
15	P	129360	565		CLAMP, Wire	1			
16	P	150199	001		FOOT	2			
17	P	150200	001		FOOT	1			
18	P	21504	091		CYLINDER, Rubber	3			
19	P	129359	900		PIN, Housing, 5/16 Diameter	3			
20	P	24699	091		PIN, Retaining, "E", 5/16 Diameter	6			
21	P	36683	061		PIN, Roll, 1/8 Diameter x 1/2	3			
22	P	31931	061		WASHER, Flat, 1/2	4			
23	P	129360	154		NUT, Retainer	3			
24	P	10540	091		BEARING, Plain O lite	3			
25	P	136806	493		HOUSING, Floor Lock	3			
26	P	134469	091		ASSEMBLY, A.C. Plate (see Figure 14-5)	1			
27	P	93908	037		SCREW, Sems, #8-32 x 1/2	2			
28	P	129359	849		STANDOFF, 1/4-20	1			
29	P	141210	305		ASSEMBLY, Motor and Pump (see Figure 14-26)	1			
30	P	45744	001		MOUNTING, Motor (vibration mount)	4			
31	P	3097	041		NUT, Hex, 1/4-20	3			
32	P	40848	061		SCREW, Set Sockethead, 1/4-20 x 3/4	2			
33	P	146653	789		ASSEMBLY, Foot Pump (see Figure 14-6)	1			
34	P	129360	876		O-RING, Ram	1			
35	P	19678	045		LOCKWASHER, 1/4	14			
36	P	91520	091		SCREW, Cap, Hex Sockethead, 1/4-20 x 3	2			
37	P	81673	006		WASHER, Flat, 1/4	2			
38					Item # Not Used				
39	P	2792	045		SCREW, Cap, Hex Sockethead, 1/4-20 x 1/2	7			
40	P	136807	103		ASSEMBLY, Power Supply (Domestic - see Item #59 for Int'l)	1			
41	P	93908	035		• SCREW, Sems, #8-32 x 5/16 Long	6			
42	P	84114	003		• WASHER, Flat, #8	4			
43	P	760265	598		• PC BOARD, Power Control	1			
	P	129360	518		• JUMPER	1			
44	P	93909	222		• FUSE, 1/2 AMP	1			
45	P	93908	673		• HOLDER, Fuse	1			
46	P	93909	750		• LABEL, Battery Identification	1			
47	P	93909	405		• LABEL, Fuse Replacement	1			
48	P	129360	652		SCREW, Tamper-proof, #4-40 x 1/2	4			
49	P	129360	653		COVER, Switch	2			

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-4-					TABLE BASE ASSEMBLY - 3085 SP - (Part 3 of 3, continued)	X			
50	P	764324	271		CORD, w/Velcro® Strap	1			
	P	56401	559		CORD, Intl. (Continental Europe)	1			
	P	93909	352		CORD ASSEMBLY, Europe	1			
51	P	129360	524		DECAL, Fuse F3	1			
52	P	81669	002		SCREW, Truss Head, #10-32 x 1/2	2			
53	P	5575	045		WASHER, Flat Plain Wide 1/4"	1			
54	P	93909	538		BUMPER ASSEMBLY, Stand-off, #8-32 (Before 5/13/99)	5			
	P	56397	673		BUMPER ASSEMBLY, #1/4-20 (After 5/13/99)	1			
55	P	129360	481		BUMP-ON, Self-Stick	5			
56	P	93909	406		LABEL, Warning, Fuse (AC), French	1			
57	P	93909	454		LABEL, Warning, Fuse (AC), English	1			
58	P	56401	597		LABEL, Fuse, AC (German, French, Spanish 220V)	1			
59	P	141214	038		POWER SUPPLY (German, French, Spanish 220V)				
	P	129360	586		• FUSE, 1/2 Amp (IEC)				
	P	129360	654		• FUSEHOLDER, IEC Knob				
	P	129360	585		• FUSE, 1/2 Amp (IEC)				
60	P	93909	734		LABEL, Manual Pump (Domestic)	1			
	P	56401	595		LABEL, Manual Pump (German, French, Spanish 220V)	1			

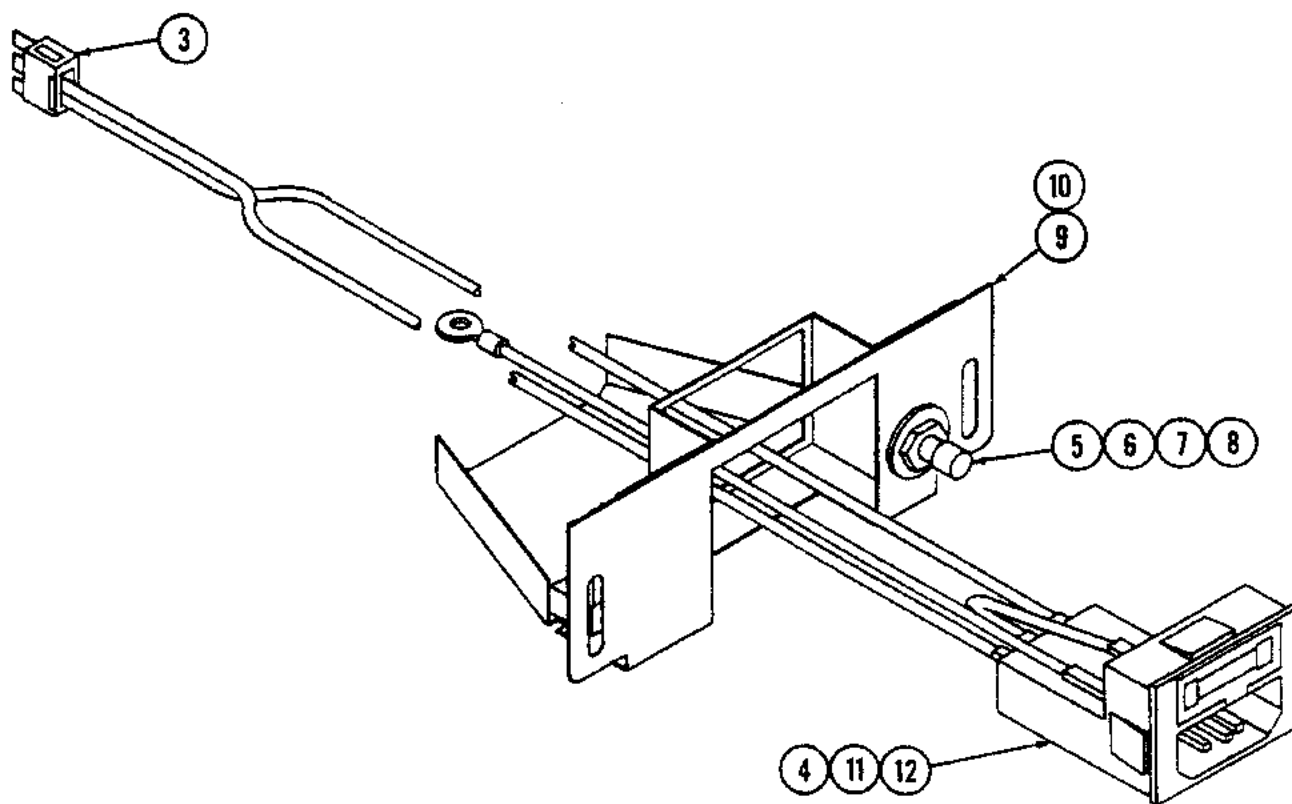


Figure 14-5. AC Plate Assembly

FIG. & ITEM NO.	PART NUMBER		S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-5- 1		134469	339	AC PLATE ASSEMBLY, w/o Labels and Floor Lock Switch	X			
				AC PLATE, Related Parts List		X		
2				Item # Not Used				
3	P	136807	030	ASSEMBLY, Cable, Power Control	1	1		
4	P	150823	292	CARTRIDGE, Fuse, 6 Amp (120 VAC Service)	2	2		
	P	129360	587	FUSE, 4 Amp (IEC) (French, Spanish, German 220V)	2			
5	P	129360	371	PLUG, Grounding, International	1	1		
6	P	129360	373	WASHER, Color Coded, International	1	1		
7	P	129360	375	WASHER, Lock, F/M6	1	1		
8	P	129360	451	NUT, Hex, M6 x 1	1	1		
9	P	93909	402	* LABEL - Auxiliary (Not Shown)		1		
10	P	93909	403	* LABEL - Receptacle Ground (Not Sshown)		1		
11	P	93909	406	* LABEL - Warning Fuse (AC) French (Not Shown)		1		
12	P	93909	454	* LABEL - Warning Fuse (AC) English (Not Shown)		1		
13	P	93909	462	TIE WRAPS (Not Shown)		6		
				* Labels must be ordered individually.				

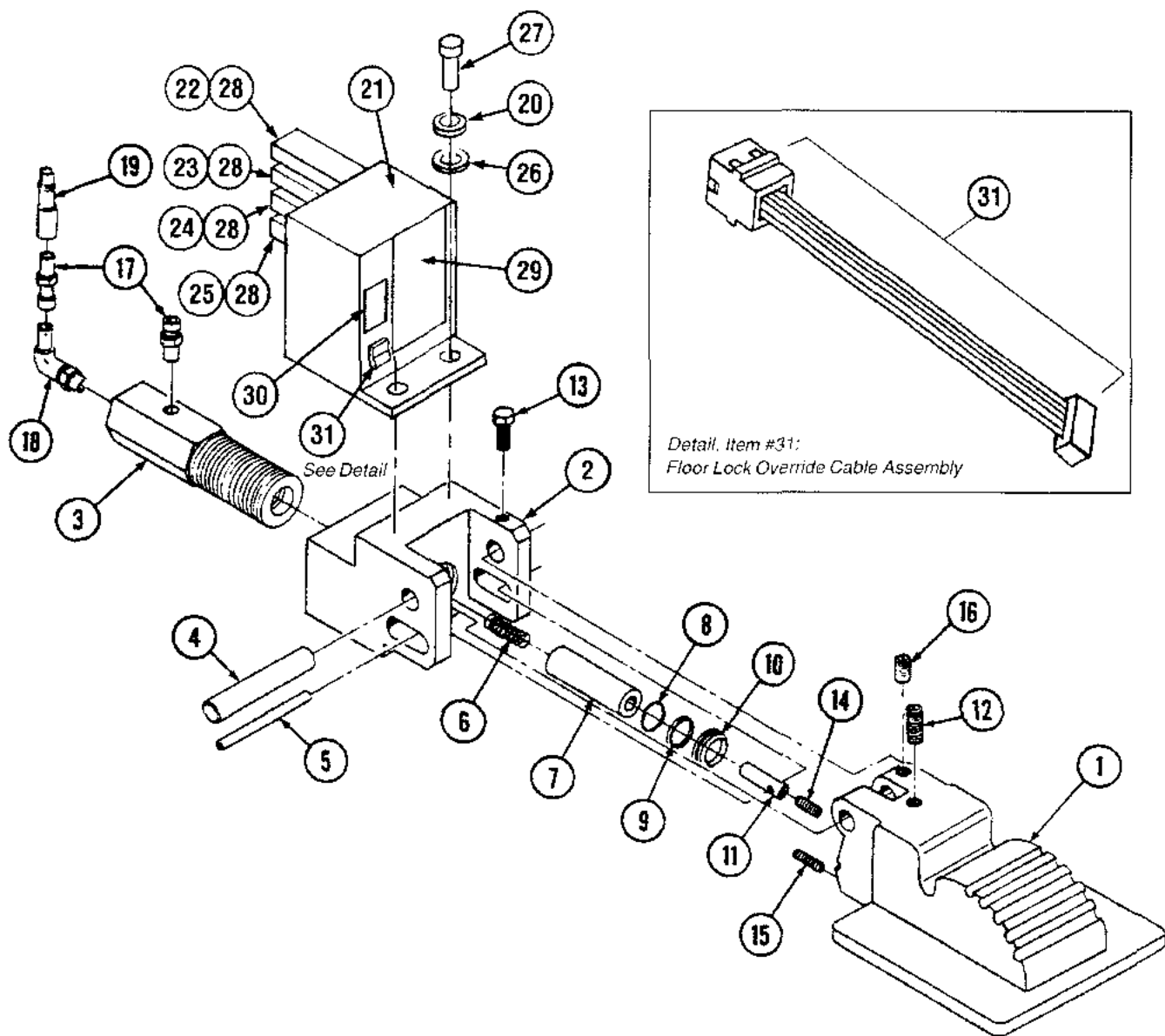


Figure 14-6. Foot Pump Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-6-	P	146653	789		FOOT PUMP ASSEMBLY	X			
					FOOT PUMP, Related Parts List		X		
1	P	136807	013		PEDAL, Painted	1			
2	P	136807	008		BRACKET, Pump	1			
3	P	136807	006		BODY, Pump	1			
4	P	129360	462		ROD, Pedal	1			
5	P	129360	468		PIN, Push	1			
6	P	129360	464		SPRING, Compression	1			
7	P	136807	009		PLUNGER	1			
8	P	43489	091		O-Ring	1			
9	P	129360	463		RING, Back-up	1			
10	P	129360	479		RING, Wiper	1			
11	P	93909	373		ROD, Push	1			
12	P	80001	091		SCREW, Set, Nylock, 1/4-20 x 1/2 Long	1			
13	P	83443	001		SCREW, Hexhead, 1/4-20 x 1/2 Long, Nylon	1			
14	P	42617	045		SCREW, Set, #6-32 x 1/4 Long	1			
15	P	31276	061		SCREW, Set, #10-32 x 1/2 Long	2			
16	P	4772	045		SCREW, Set, 1/4-20 x 1/4 Long	1			
17	P	93909	512		VALVE, Check	2			
18	P	129360	335		FITTING, Hydraulic	1			
19	P	129360	569		FITTING, Hydraulic	1			
20	P	81673	006		WASHER, Flat, 1/4				
21	P	134469	338		BRACKET, Circuit Breaker		1		
22	P	56397	408		BREAKER, Circuit, 15 Amp		1		
23	P	56397	356		BREAKER, Circuit, 12 Amp		1		
24	P	93909	320		BREAKER, Circuit, 2 Amp		1		
25	P	93909	321		BREAKER, Circuit, 4 Amp		1		
26	P	19678	045		LOCKWASHER, 1/4		4		
27	P	2792	045		SCREW, Cap, Hex, Socket Head, 1/4-20 x 1/2		2		
28	P	129360	372		BUTTON, Seal Reset		4		
29	P	56397	596		LABEL, Circuit Breaker		1		
	P	56401	898		LABEL, Circuit Breaker (French, Spanish, German 220V)		1		
30	P	93909	402		LABEL, Auxiliary Floor Lock		2		
	P	129360	898		LABEL, Auxiliary Floor Lock (French, Spanish, German 220V)		2		
31	P	134469	092		CABLE ASSEMBLY, Floor Lock Override		1		

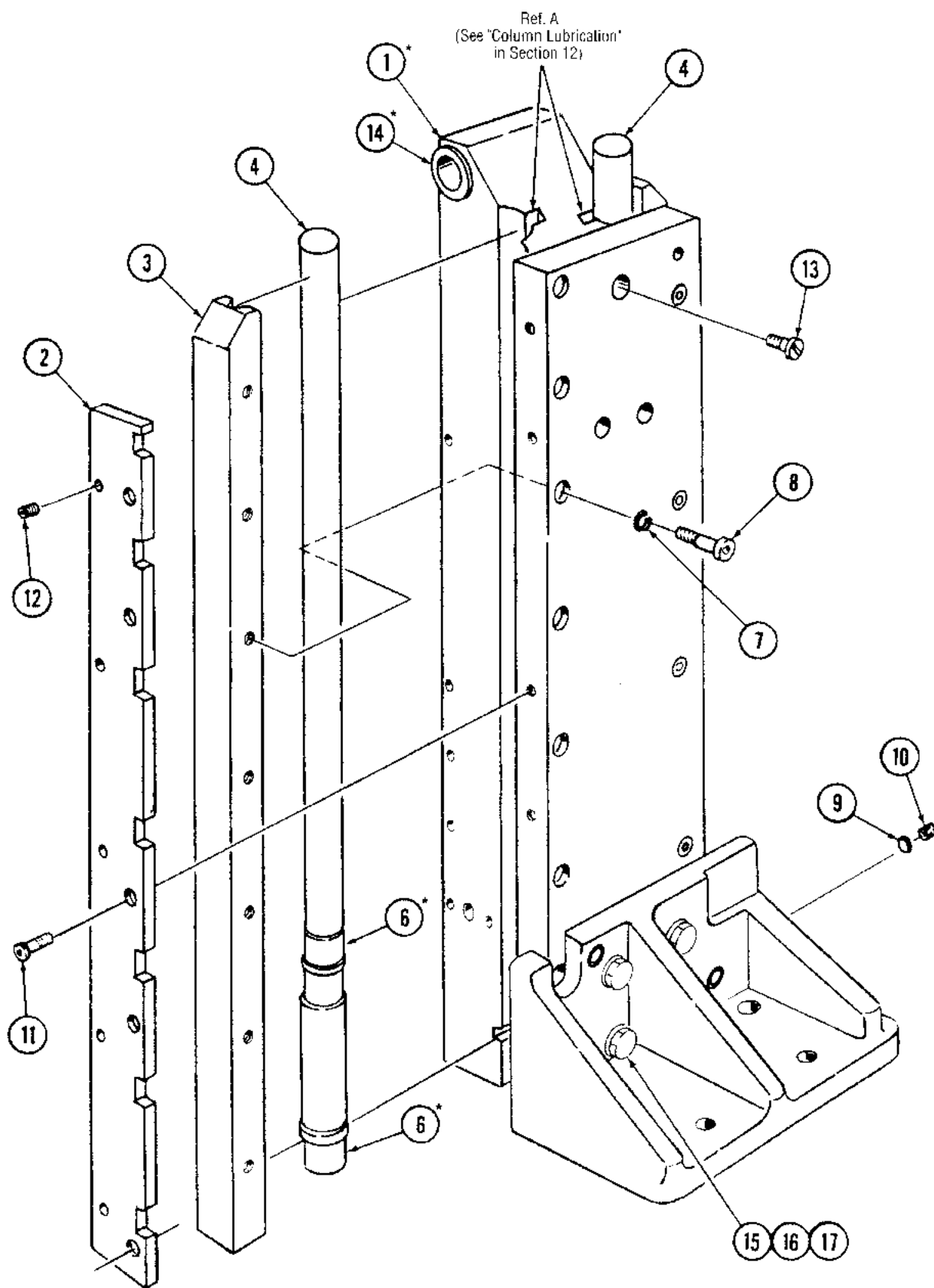


Figure 14-7. Column Assembly (Part 1 of 2)

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-7-					COLUMN ASSEMBLY (Part 1 of 2)	X			
1				*	BLOCK, Stage	1			
2	P	146653	433		SUPPORT, Pressure Plate	1			
3	P	146653	432		SUPPORT, Right Hand	1			
4	P	93908	595		GUIDE, Shaft	2			
5	P	129359	859	*	OILER, Column (Not Shown)	2			
6	P	129359	671	*	BEARING	4			
7	P	129359	878		WASHER, Flat	7			
8	P	129359	687		SCREW, Cap, Hexhead, 1/2-20 x 1-3/4	7			
9	P	22436	091		PLUG, Nylon Rod, 5/32 Dia. x 5/32	1			
10	P	10585	041		SCREW, Set, Hex Socket, #10-32 x 1/4	1			
11	P	129352	751		SCREW, Buttonhead Socket, #10-24 x 1/2	5			
12	P	43282	091		SCREW, Set, #10-32 x 5/16	5			
13	P	129359	690		SCREW, Self-sealing, #1/4-20 x 1/4 (Bleed Screw)	1			
14	P			*	BEARING, Olite	2			
15	P	129359	841		SCREW, Hexhead, 3/8 -24 x 1-1/2	3			
16	P	19680	041		LOCKWASHER, 3/8	3			
17	P	17263	042		WASHER, Flat, 3/8	3			
<p>* NOTE: Replacement of these parts requires servicing at a STERIS Repair Depot.</p>									

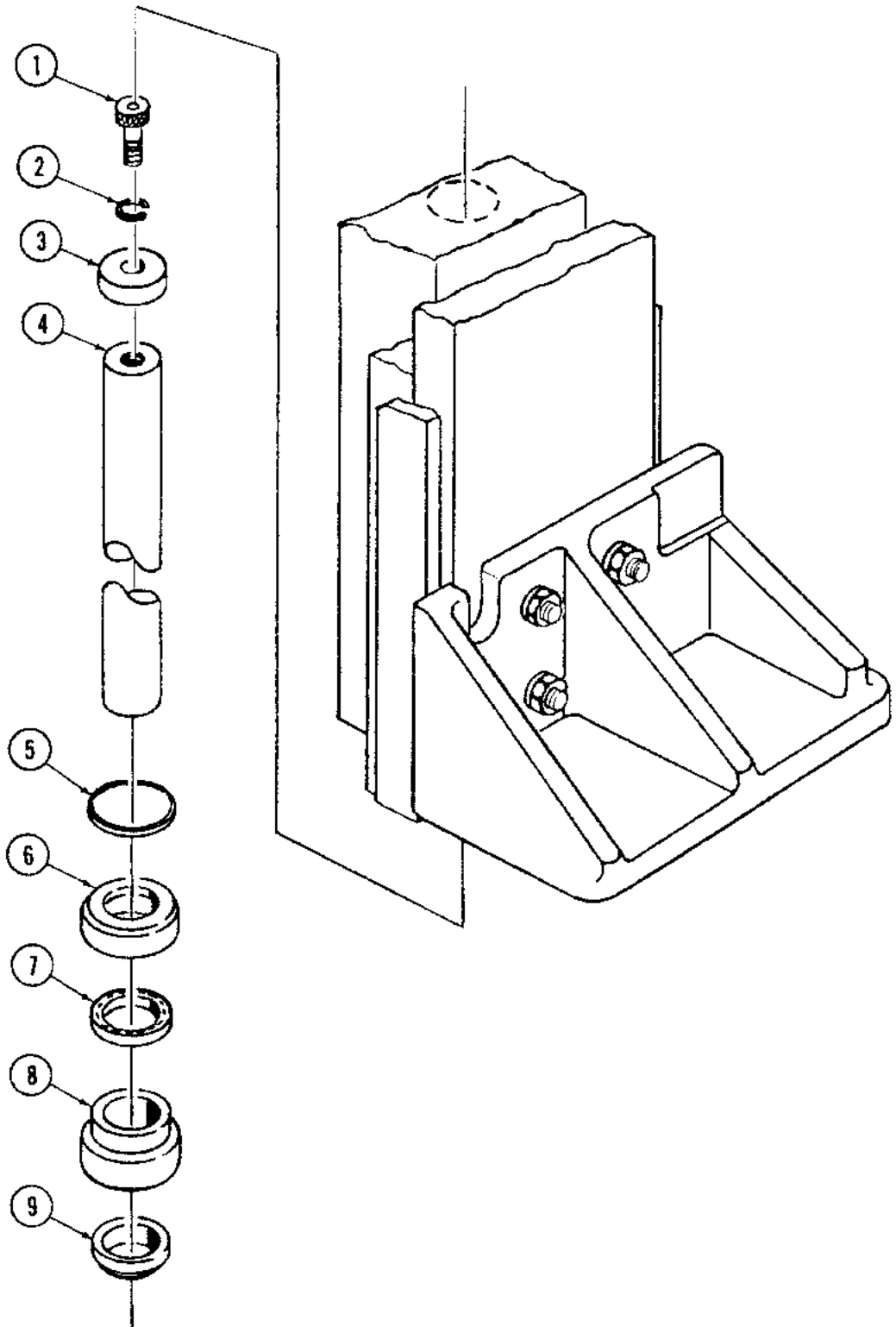


Figure 14-8. Column Assembly (Part 2 of 2)

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-8-	P	764324	901	*	COLUMN ASSEMBLY (Part 2 of 2)	X			
					KIT, Column Cylinder Seal		X		
1	P	16868	041		SCREW, Cap, Sockethead, 3/8-16 x 1	1	1		
2	P	19680	041		LOCKWASHER, #3/8	1	1		
3	P	56397	238		CAP, Stop	1	1		
4	P	56397	237		RAM	1	-		
5	P	129359	691		O-RING	1	1		
6	P	93908	577		BLOCK, Bearing	1	1		
7	P	134469	226		SEAL, Reciprocating	1	1		
8	P	93908	591		NUT, Ram, #2-16 UNF	1	-		
9	P	129359	838		WIPER-SCRAPER	2	2		
10	P	764324	884	*	SPANNER WRENCH (Not Shown)	A/R	-		
11	P	129359	690		FASTENER, Self Sealing (Shown on Figure 14-7, Column Assembly, Part 1 of 2, Item #13)	-	1		
<p>* Whenever replacing seals or ram, replace all parts with P-764324-901, Ram/Seal Kit. Spanner wrench required, P-764324-884.</p>									

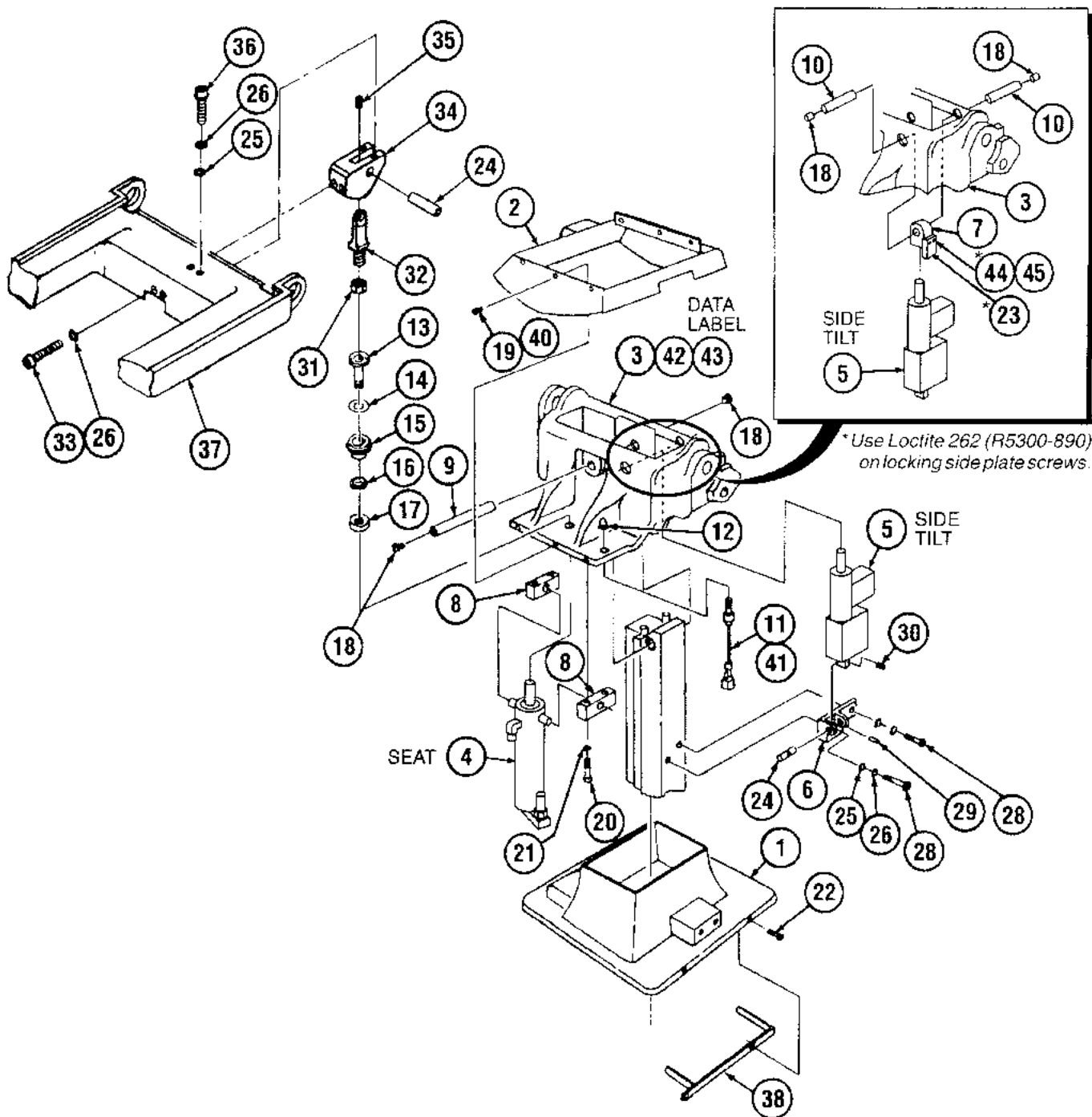
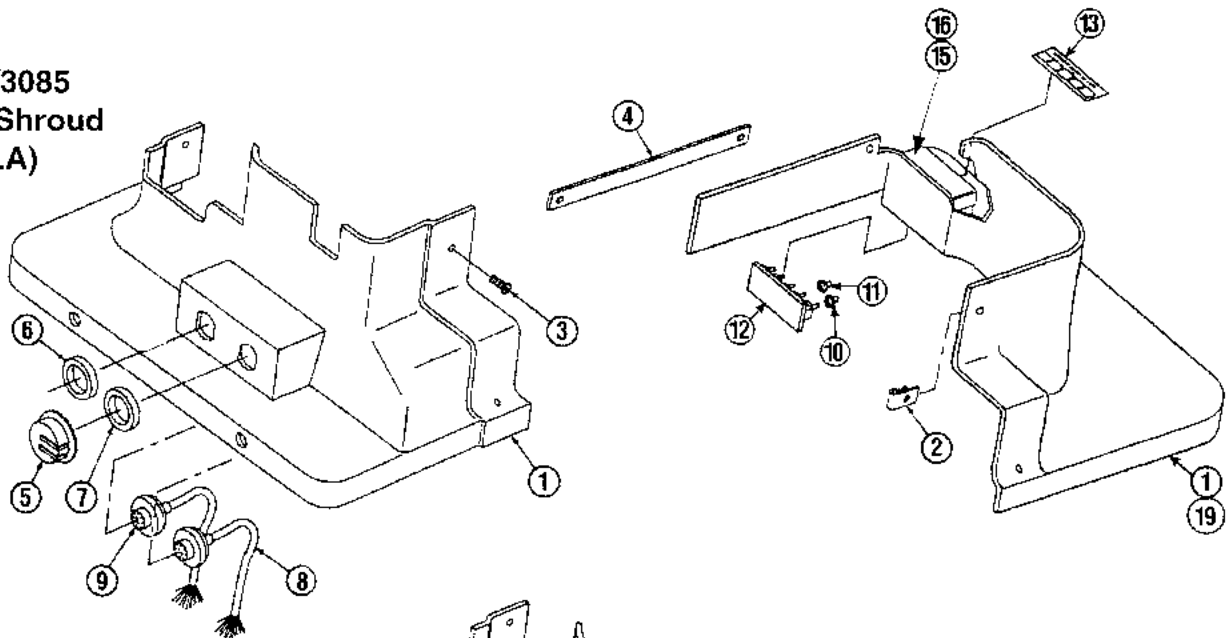


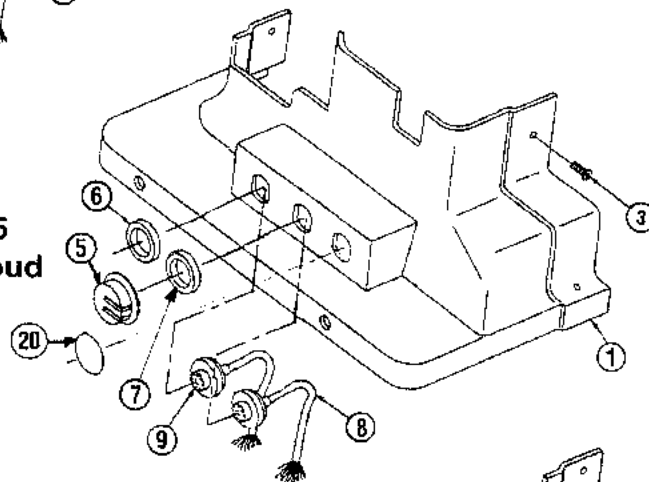
Figure 14-9. Table Saddle/Skirt Assembly

FIG. & ITEM NO.	PART NUMBER		S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-9-				TABLE SADDLE/SKIRT ASSEMBLY	X			
1	P	764323	283	ASSEMBLY, Shroud Cap (see Figure 14-10)	1			
2	P	141210	083	CAP, Split Skirt	1			
	P	49131	043	SCREW, Button Head #10-24 x 1/4" Long	2			
3	P	146653	435	SADDLE	1			
4	P			CYLINDER, Hydraulic (Seat) (see Figure 14-22)	1			
5	P			CYLINDER, Tilt (see Figure 14-22)	1			
6	P	134469	346	BRACKET, Tilt Cylinder	1			
7	P	150823	750	KNUCKLE, Tilt Cylinder	1			
8	P	93908	663	PAD, Pivot Mounting	2			
9	P	129359	680	PIN	1			
10	P	129359	850	PIN, Clevis, 3/8 Dia. x 2	2			
11	P	136807	080	ASSEMBLY, Limit Switch Seat	1			
	P	150823	243	•PUSHBUTTON				
12	P	129360	582	BOOT, Push Button	1			
13	P	93909	411	ADAPTER	1			
14	P	150823	517	PAD, Adapter	1			
15	P	56397	399	RING	1			
16	P	56397	400	RING, Wiper	1			
17	P	56397	401	NUT	1			
18	P	129360	580	PLUG, Pipe	4			
19	P	150823	247	SCREW, Hex Socket Head #4-40 x 3/8" St. Stl.	6			
20	P	129353	302	SCREW, Cap, Sockethead, 5/16-18 x 1-1/2	4			
21	P	19691	061	LOCKWASHER, 5/16	4			
22	P	129360	882	SCREW, Cap, Hex Sockethead, #10-24 x 3/8	4			
23	P	150823	744	LOCKING PLATE	1			
24	P	129360	175	PIN, Dowel, 3/8 x 1-1/2	2			
25	P	150473	296	WASHER, Flat, 5/16	2			
26	P	81682	008	LOCKWASHER, 5/16	2			
27				Item # Not Used				
28	P	150830	009	SCREW, Cap, Sockethead, 5/16-18 x 1-1/2" Lg	2			
29	P	45605	061	PIN, Roll, 1/4 x 3/4	1			
30	P	36883	061	SCREW, Set (Cup Point), #10-32 x 3/8	1			
31	P	16055	045	NUT, Jam, 1/2-20	1			
32	P	129359	737	KNUCKLE, Seat Lift Cylinder	1			
33	P	91521	091	SCREW, Cap, Sockethead, 1/4-20 x 2-1/4	2			
34	P	136806	496	CLEVIS, Seat Section	1			
35	P	10585	041	SCREW, Set (Cup Point), #10-32 x 1/4	1			
36	P	11266	045	SCREW, Cap, Sockethead, 1/4-20 x 1	2			
37	P	146655	479	FRAME, Seat Section	1			
38	P	141210	147	SUPPORT, Shroud Mounting (Set)	1			
39	P	93909	795	LABEL, Warning (Electric Table Only) (not shown)	1			
40	P	150824	001	WASHER, Flat #4	6			
41	P	150476	930	BASE, Mounting	1			
42	P	93909	375	LABEL, Patient				
43	P			LABEL, Data Label (S/N Data Plate)	1			
44	P	150830	153	SCREW, Sockethead, M 5x20	2			
45	P	150830	154	WASHER, Lock, M5	2			
* Use Loctite 262 (R5300-890) on locking side plate screws.								

**3080/3085
2-Hole Shroud
(NLA)**



**3080/3085
3-Hole Shroud**



**3085
HERMES-Ready
Shroud**

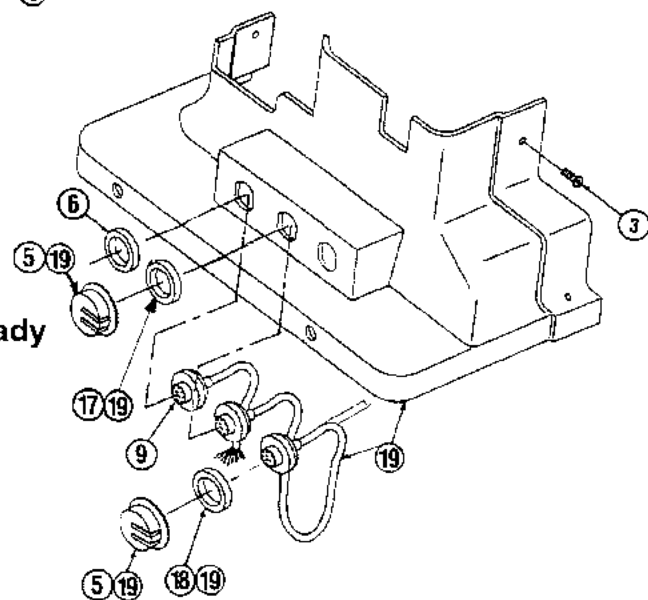


Figure 14-10. Shroud Cap Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-10-					SHROUD CAP ASSEMBLY, 3085	X			
					SHROUD CAP ASSEMBLY, 3085 HERMES-Ready		X		
1	P	764323	283	*	KIT, Shroud Cap Assembly (2-piece) (3080/3085)	1	-		
2	P	150823	245		NUT, Speed	5	5		
3	P	129352	751		SCREW, Hex Socket, Button Head Cap. #10-24x1/2" Long	5	5		
4	P	150823	199		STRAP, Shroud	1	1		
5	P	129360	275		CAP, Dust	2	3		
6	P	129360	562		WASHER, Insulating (Grey) (Foot Control)	1	1		
7	P	129360	563		WASHER, Insulating (Red) (Hand Control)	1	-		
8	P	136806	819		ASSEMBLY, Cable, Hand Control (P2)	1	-		
9	P	136807	027		ASSEMBLY, Cable, Foot Control (P4)	1	1		
10	P	129360	352		BOOT SEAL, Toggle (Red)	1	1		
11	P	129360	351		BOOT SEAL, Toggle (Grey)	4	4		
12	P	93909	295		ASSEMBLY, Override Switch Board	1	1		
13	P	93909	401		DECAL, Override Switch (Domestic)	1	1		
	P	93911	605		DECAL, Override Switch (French, Spanish, German 220V)	1	1		
	P	129360	897		DECAL, Override Switch (Export English 220V)	1	1		
14	P	134469	178		ASSEMBLY, Cable Override (P9 to P10) (Not Shown)	1	1		
15	P	764328	694	**	KIT, Override Hood	1	1		
16	P	150830	031	**	• ADHESIVE, Override Cover	2	2		
17	P	150830	158		WASHER, Insulating (Blue), HERMES-Ready	-	1		
18	P	150830	160		WASHER, Insulating (Black), HERMES-Ready	-	1		
19	P	134469	379	***	SHROUD CAP AND CABLE ASSEMBLY(P15) (Cable is not available by itself)	-	1		
20	P	150830	205		• LABEL, 1" Diameter (Cover for Blank Hole), Included with Item #1	1	-		
<p>* For Item #1, used on 3080 RC/RL/SP tables, either 2-hole or 3-hole shroud is applicable.</p> <p>**When ordering Item #15, order Item #16 also. Item #16 is not stocked with Item #15, because of expiration date (shelf life).</p> <p>***Item #19 includes Items #5, 17, and 18. Items #5, 6, and 9 will be removed from shroud assembly being replaced.</p>									

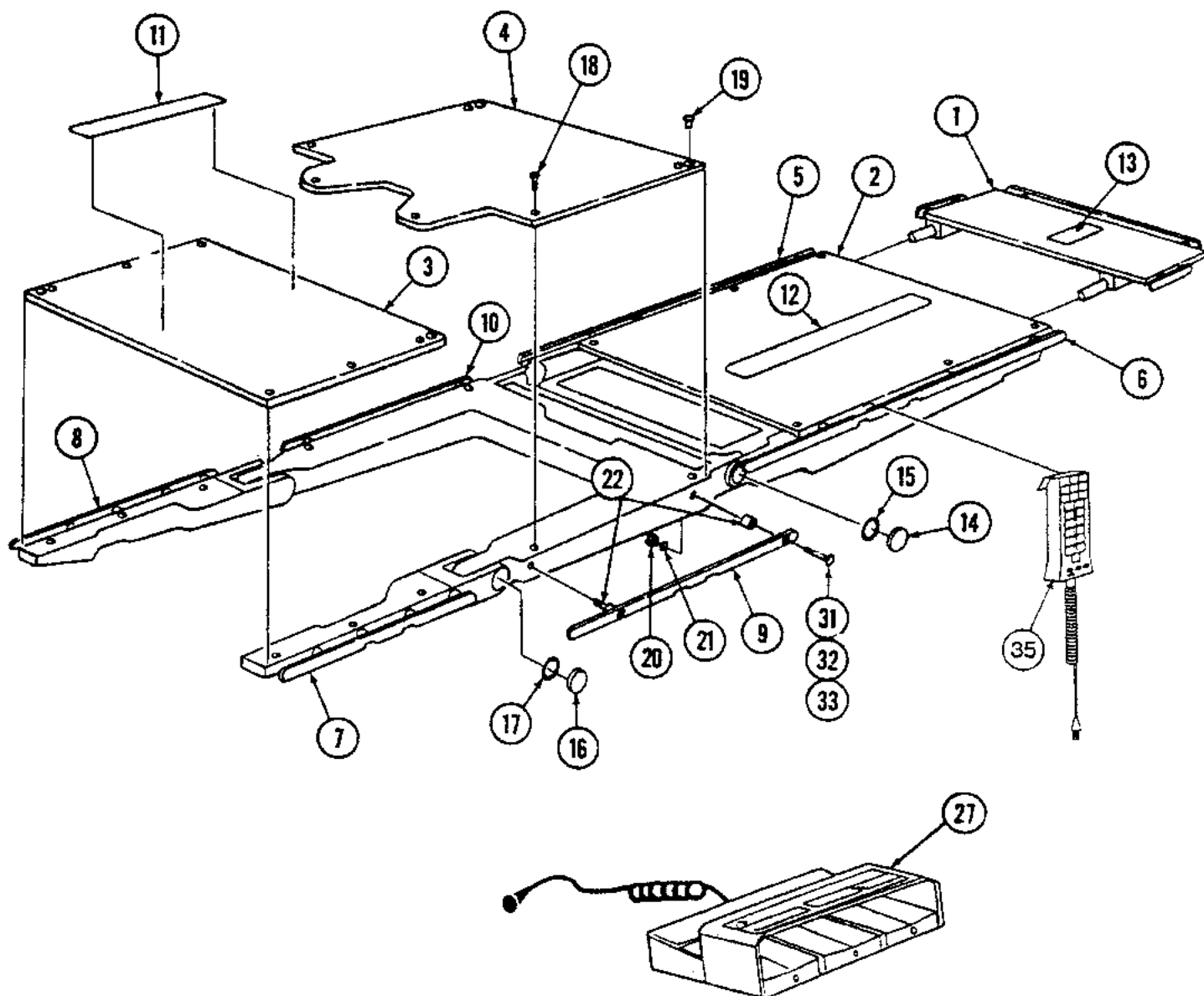


Figure 14-11. Table Tops and Side Rail Assembly

FIG. & INDEX NO.	PART NUMBER		S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-11-				TABLE TOPS AND SIDE RAIL ASSEMBLY	X			
1	P	141210	312	ASSEMBLY, Headrest, (see Figure 14-17)	1			
2	P	764324	054	TOP, Back Section	1			
3	P	764324	055	TOP, Leg Section	1			
	P	93909	539	TOP, Leg Section (Andrews Frame)	1			
4	P	764324	056	TOP, Seat Section	1			
5	P	56397	213	RAIL, Side, Back Section, Right Hand	1			
6	P	56397	214	RAIL, Side, Back Section, Left Hand	1			
7	P	56397	206	RAIL, Side, Leg Section, Left Hand	1			
	P	93909	537	RAIL, Side, Leg Section, Left Hand (Andrews Frame)	1			
8	P	56397	205	RAIL, Side, Leg Section, Right Hand	1			
	P	93909	536	RAIL, Side, Leg Section, Right Hand (Andrews Frame)	1			
9	P	56397	210	RAIL, Side, Seat Section, Left Hand	1			
10	P	56397	209	RAIL, Side, Seat Section, Right Hand	1			
11	P	129360	500	FASTENER, Hook, 16-1/2 Long	1			
12	P	129360	552	FASTENER, Hook, 17 Long	1			
	P	764325	933	• VELCRO ADHESIVE, #45				
13	P	129360	551	FASTENER, Hook	1			
14	P	93909	386	* CAP, Pivot, 1-7/8"	2			
15	P	129360	171	* TAPE, Adhesive, Pivot	2			
16	P	129360	172	** CAP, Pivot, 3"	2			
17	P	129359	894	** TAPE, Adhesive, Pivot	2			
18	P	21580	061	SCREW, Truss Head, 1/4-20 x 1"	16			
19	P	129357	090	INSERT	6			
20	P	36545	061	NUT, Hex, 5/16-18	20			
21	P	91147	061	LOCKWASHER, External Tooth, 5/16	20			
22	P	150823	276	SPACER, Side Rails	20			
23				Item # Not Used				
24				Item # Not Used				
25				Item # Not Used				
26	P	75664	061	SCREWS, Machine, Countersunk (Andrews Frame) (not shown)	6			
27	P	93909	527	Foot Control	1			
28				Item # Not Used				
29				Item # Not Used				
30				Item # Not Used				
31	P	42637	056	SCREW, Flat Head 5/16-18 x 1-1/2" Long	18			
32	P	150823	273	SCREW, Flat Head 5/16-18 x 2" Long	1			
33	P	150823	274	SCREW, Flat Head 5/16-18 x 2-1/2" Long	1			
34				Item # Not Used				
35	P	141210	318	HAND CONTROL, 3085 SP (Domestic)	1			
	P	141198	920	HAND CONTROL, 3085 SP (Export)	1			
				REPAIR KITS:				
		764328	572	• KIT, Control Housing w/Bracket (Domestic Only)	1			
		764325	633	• PC BOARD Replacement	1			
		764328	571	• KIT, Control Cord Replacement	1			
	P	141210	367	HAND CONTROL, 3085 SP (HERMES)	1			
36				PADS				
	P	136806	811	PAD, Leg Section, 2" (Not Shown)	1			
	P	136806	813	PAD, Head Section, 2" (Not Shown)	1			
	P	136806	815	PAD, Back/Seat Section (Not Shown)	1			
	P	134469	291	PAD, Akros Head Section (Not Shown)	1			
	P	134469	292	PAD, Akros Back/Seat Section (Not Shown)	1			
	P	134469	293	PAD, Akros Leg Section (Not Shown)	1			

* Items 14 and 15 should be ordered together.

** Items 16 and 17 should be ordered together.

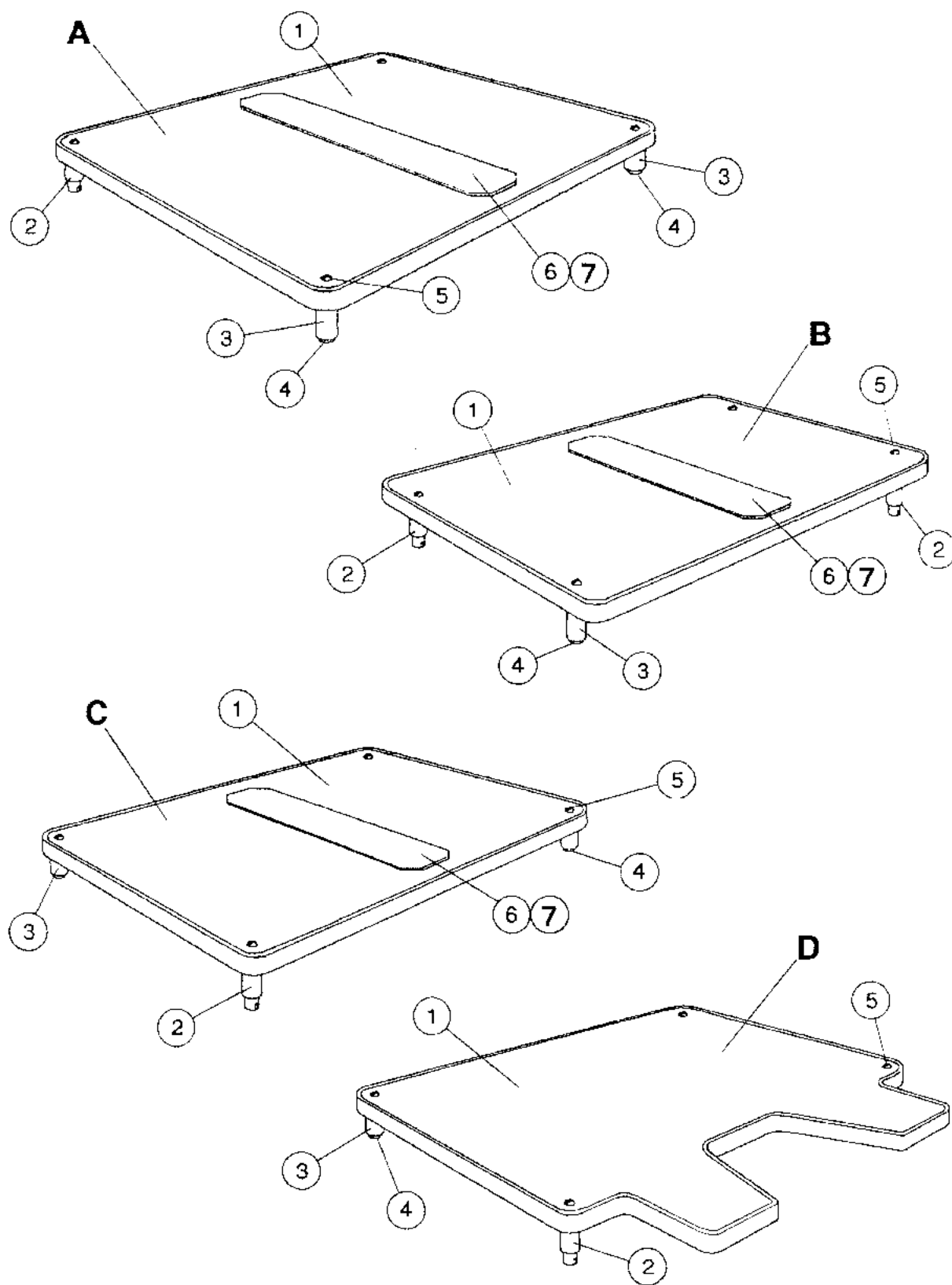


Figure 14-12. X-Ray Top Assemblies

FIG. & INDEX NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-12-					X-RAY TOP ASSEMBLIES	X			
A	P	136807	044		X-RAY TOP ASSEMBLY, Back Section	1			
1	P	93909	289		• X-RAY TOP, Back Section	1			
2	P	93909	299		• ASSEMBLY, Spacer	2			
3	P	129360	349		• SPACER	2			
4	P	129360	481		• BUMPON	2			
5	P	150055	001		• SCREW, Truss Head	4			
6	P	129360	552	*	• FASTENER, Hook	A/R			
7	P	764325	933	*	• KIT, Adhesive, Velcro	A/R			
B	P	136807	045		X-RAY TOP ASSEMBLY, Head Section	1			
1	P	93909	286		• X-RAY TOP, Head Section	1			
2	P	93909	299		• SPACER ASSEMBLY	2			
3	P	129360	349		• SPACER	2			
4	P	129360	481		• BUMPON	2			
5	P	150055	001		• SCREW, Truss Head	4			
6	P	129360	551	*	• FASTENER, Hook	A/R			
7	P	764325	933	*	• KIT, Adhesive, Velcro	A/R			
C	P	136807	042		X-RAY TOP ASSEMBLY, Leg Section	1			
1	P	93909	287		• X-RAY TOP, Leg Section	1			
2	P	93909	299		• SPACER ASSEMBLY	2			
3	P	129360	349		• SPACER	2			
4	P	129360	481		• BUMPON	2			
5	P	150055	001		• SCREW, Truss Head	4			
6	P	129360	552	*	• FASTENER, Hook	A/R			
7	P	764325	933	*	• KIT, Adhesive, Velcro	A/R			
D	P	136807	043		X-RAY TOP ASSEMBLY, Seat Section	1			
1	P	93909	288		• X-RAY TOP, Seat Section	1			
2	P	93909	299		• SPACER ASSEMBLY	2			
3	P	129360	349		• SPACER	2			
4	P	129360	481		• BUMPON	2			
5	P	150055	001		• SCREW, Truss Head	4			
* Use Velcro Adhesive #45 (P-764325-933)									

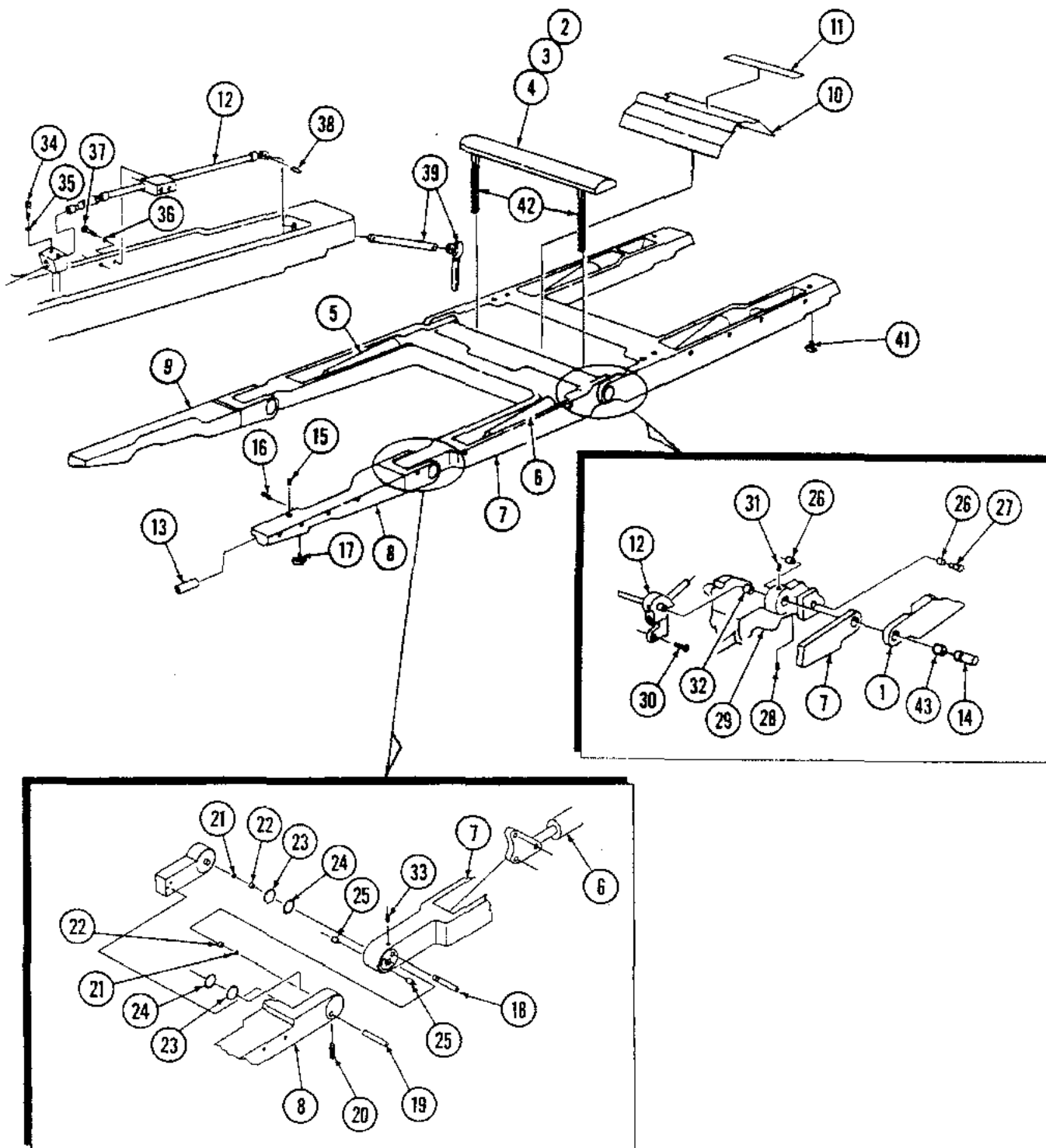


Figure 14-13. Tabletop Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-13-					TABLETOP ASSEMBLY	X			
1					ASSEMBLY, Back Section (see Figure 14-14)	1			
2	P	136807	076		ASSEMBLY, Kidney Bridge and Rack	1			
3	P	3952	041		SCREW, Roundhead, Machine, 1/4-20 x 1/2 Long	2			
4	P	3999	041		SCREW, Roundhead, Machine, 1/4-20 x 5/8 Long	2			
5	P				CYLINDER ASSEMBLY, Leg, Right-Hand (see Figure 14-22)	1			
6	P				CYLINDER ASSEMBLY, Leg, Left-Hand (see Figure 14-22)	1			
7					ASSEMBLY, Seat Section (see Figure 14-15)	1			
8	P	146653	785		ASSEMBLY, Leg Section, Left Side (see Figure 14-16)	1			
9	P	146653	786		ASSEMBLY, Leg Section, Right Side (see Figure 14-16)	1			
10	P	136807	118		COVER, Saddle	1			
11	P	129360	687		FASTENER, Hook, 1 x 7	1			
12	P	146653	926		ASSEMBLY, Kidney Bridge Shaft (see Figure 14-18)	1			
13	P	93909	431		BEARING, Mounting	2			
14	P	129359	689		PIN, Pivot	2			
15	P	90348	061		PIN, Roll, 1/8 x 3/8	2			
16	P	35139	061		SCREW, Set (Cup Point), #6-32 x 1/4	2			
17	P	77559	056		ASSEMBLY, Knob	2			
18	P	129359	746		PIN, 5/8 Diameter x 2-1/2	2			
19	P	129359	738		PIN, 1/2 Diameter x 3	2			
20	P	150763	001		SCREW, Set (Half Dog), #8-32 x 1/4	4			
21	P	129359	748		WASHER, Thrust, 1 OD x 9/16 ID x 1/16 THK	4			
22	P	129359	750		BEARING, Sleeve	4			
23	P	129360	162		ASSEMBLY, Hinge Seal	4			
24	P	129360	161		BEARING, Hinge Seal	4			
25	P	129359	740		SPACER, Pin	4			
26	P	93908	827		BEARING, Nylon Flange	4			
27	P	129359	693		PIN	2			
28	P	15263	091		SCREW, Set (Cone Point), 1/4-20 x 1/4	2			
29	P	146653	435		SADDLE	1			
30	P	74117	061		SCREW, Cap, Sockethead, 1/4-20 x 3/8	2			
31	P	129360	581		SCREW, Set (Cup Point), 1/4-20 x 1/2	2			
32	P	129360	579		BEARING	2			
33	P	10585	041		SCREW, Set (Cup Point), #10-32 x 1/4	5			
34	P	129360	694		SCREW, Cap, Sockethead, #8-32 x 1-1/2	2			
35	P	19690	061		LOCKWASHER, #8	2			
36	P	46115	091		LOCKWASHER, #10	2			
37	P	9298	041		SCREW, Roundhead, #10-32 x 1/2	2			
38	P	41511	061		PIN, Groove, 5/32 x 5/8	1			
39	P	93909	474		ASSEMBLY, Kidney Bridge Handle (see Figure 14-19)	1			
40	P	129360	511		INSERT, Helicoil, 5/16-18	2			
41	P	93909	192		KNOB, 5/16-18	2			
42	P	129359	653		RACK	2			
43	P	93908	828		BEARING, Teflon, Tapered	4			

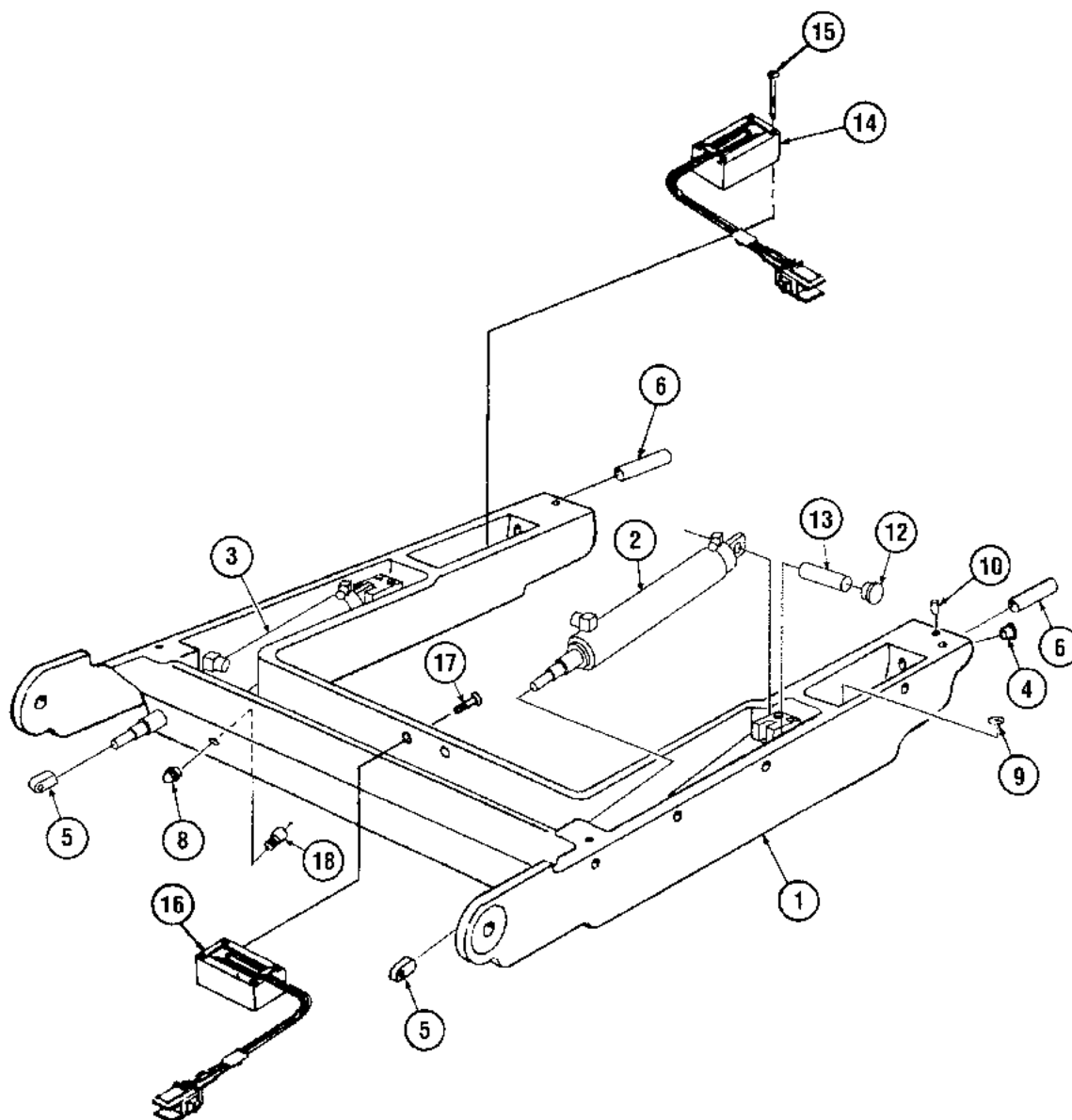


Figure 14-14. Back Section Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-14-					BACK SECTION ASSEMBLY	X			
1				*	BACK SECTION	1			
2					CYLINDER, Hydraulic (Back Section, Left-Hand - see Figure 14-22)	1			
3					CYLINDER, Hydraulic (Back Section, Right-Hand - see Figure 14-22)	1			
4	P	129359	853	*	BEARING, Olite	1			
5	P	129359	652		CLEVIS, Cylinder	2			
6	P	93909	431	*	BEARING, Headrest Mounting	4			
7					Item # Not Used				
8	P	129360	582		BOOT, Limit Switch	2			
9	P	129360	483	*	STICKER, Neutral Ground	1			
10	P	90348	061		PIN, Roll, 1/8 x 3/8	4			
11					Item # Not Used				
12	P	150823	198		PLUG, Button	2			
13	P	150823	203		PIN, Dowell 3/8" Dia. x 2-1/2" Long	2			
14	P	136807	727		ASSEMBLY, Mercury Switch (P-34)	1			
15	P	118407	045		SCREW, Pan Head #6-32 x 1" Long	2			
16	P	136807	728		ASSEMBLY, Mercury Switch (P-33)	1			
17	P	81681	003		SCREW, Round Head #6-32 x 1/4" Long	2			
18	P	129360	888		SWITCH, LS4, Back	1			
* Back section casting must be special-ordered. Contact Service Support.									

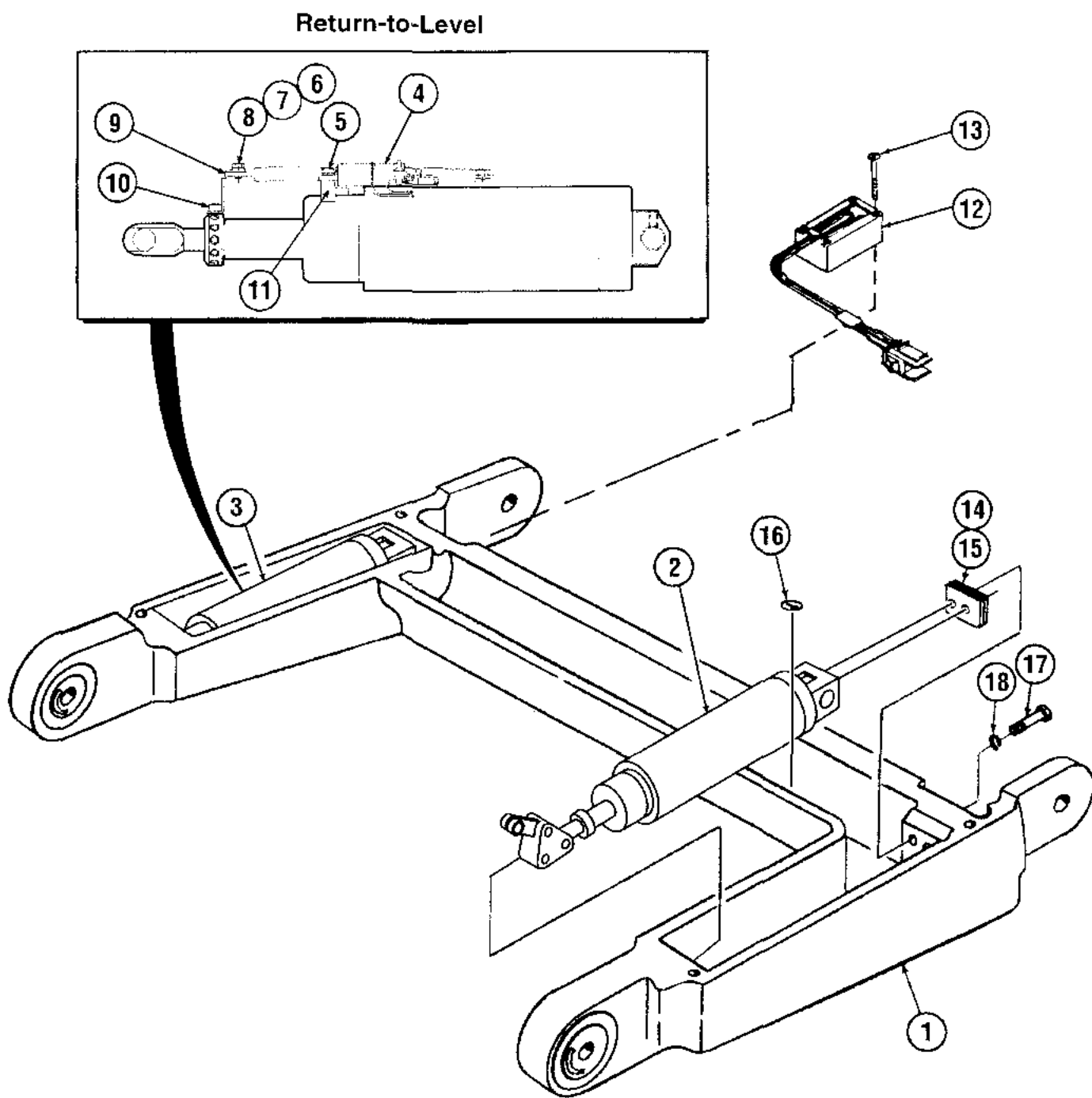


Figure 14-15. Seat Section Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-15-					SEAT SECTION ASSEMBLY	X			
1	P	764328	196		FRAME, Seat Section	1			
2					LEG CYLINDER, L.H. Assembly (see Figure 14-22)	1			
3					LEG CYLINDER, R.H. Assembly (see Figure 14-22)	1			
4	P	136807	731		SELF LEVEL ASSEMBLY (LS6 and LS7)	1			
5	P	129361	758		SCREW, Soc. Hd. Shoulder, #4-40 x 3/16" LG	1			
6	P	84116	002		LOCKWASHER, #6, Internal Tooth	1			
7	P	84114	002		WASHER, Flat, #6	1			
8	P	129361	760		SCREW, Hex Hd., #6-32 x 1/4" LG	1			
9	P	56397	374		BRACKET, Support Cam	1			
10	P	129361	761		SCREW, Soc. Hd., #8-32 x 1/4" LG	1			
11	P	150823	437		SPACER	1			
12	P	136807	726		MERCURY SWITCH ASSEMBLY (P-35)	1			
13	P	118407	045		SCREW, Pan Hd., #6-32 x 1" LG	4			
14	P	129359	836		SHIM, 010 THK	A/R			
15	P	129360	498		SHIM, 063 THK	A/R			
16	P	129360	483		STICKER, Natural Ground	2			
17	P	12176	041		SCREW, Hex Hd., 1/4-20 x 3/4" LG	4			
18	P	150620	001		WASHER, Flat, 1/4"	4			
19	P	764325	509		FLUID-PROOFING KIT (Not Shown)	1			

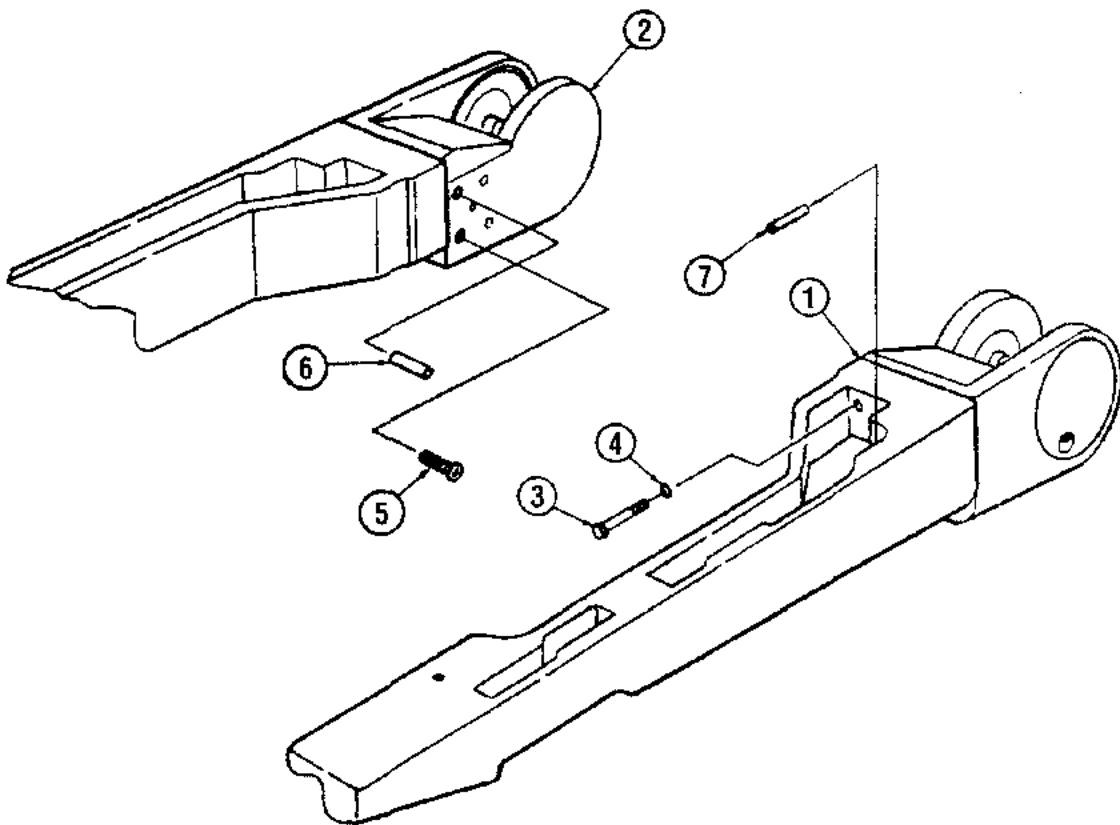


Figure 14-16. Leg Section Assemblies

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-16-					LEG SECTION ASSEMBLIES				
1	P	146653	785		LEG SECTION ASSEMBLY, Left Side	X			
2	P	146653	786		LEG SECTION ASSEMBLY, Right Side		X		
3	P	44746	045		SCREW, Cap, 3/8-16 x 1-1/4	2	2		
4	P	19680	041		WASHER, Helical Spring, 3/8	2	2		
5	P	150823	064		SCREW, Socket Flathead, 1/4-20 x 1	2	2		
6	P	15294	091		PIN, Dowel, 5/16 Diameter x 1	2	2		
7	P	129359	864		PIN, Spiral, 1/4 Diameter	2	2		

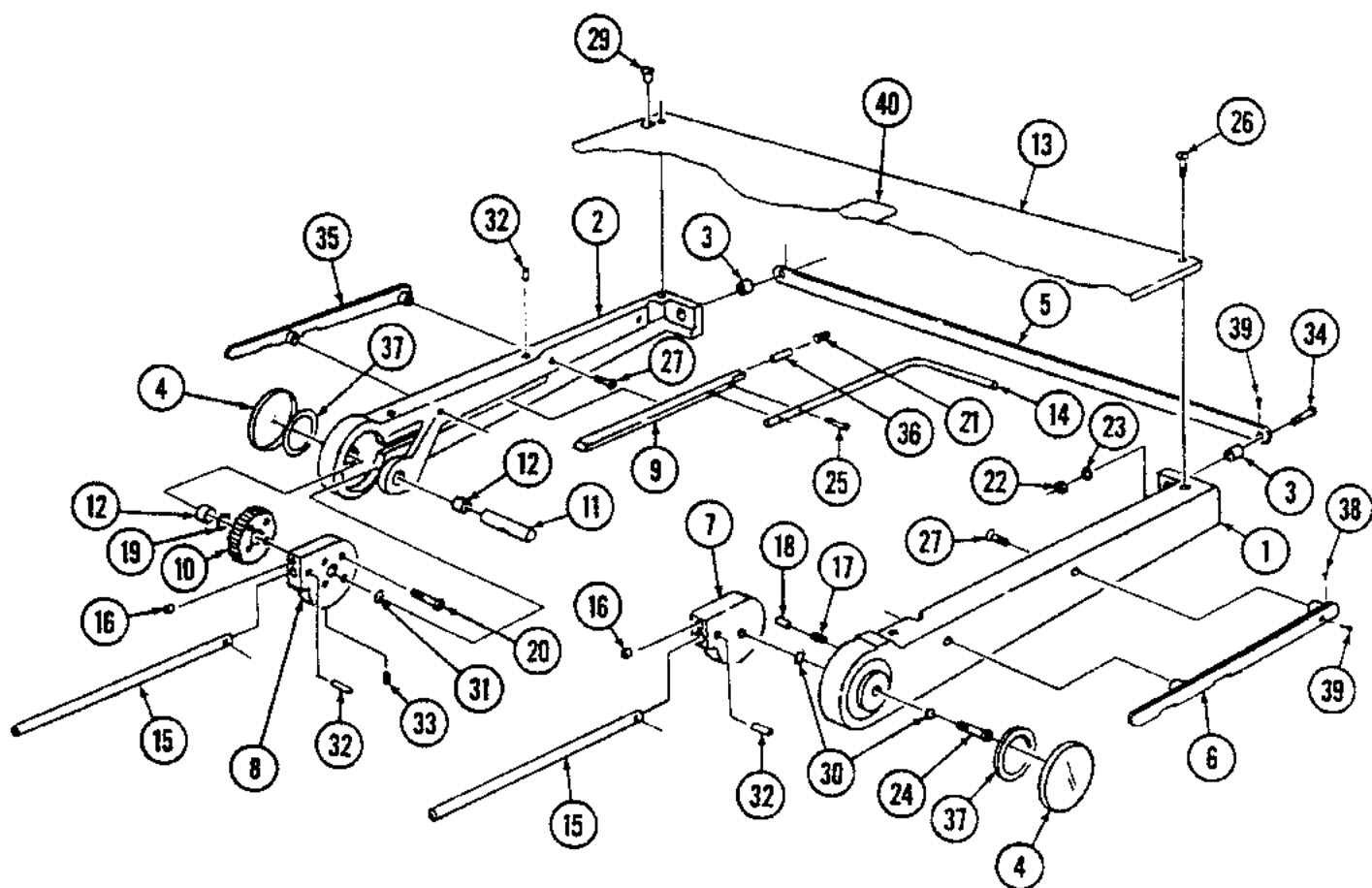


Figure 14-17. Headrest Assembly

FIG. & ITEM NO.	PART NUMBER	S V C	DESCRIPTION	UNITS PER ASSEMBLY
14-17-	P 141210	312	HEADREST ASSEMBLY	X
1	P 146653	766	FRAME, Side, Left Hand	1
2	P 146653	768	FRAME, Side, Right Hand	2
3	P 15171	042	SPACER	2
4	P 93909	366	CAP, Pivot	1
5	P 93909	204	RAIL, End	1
6	P 93909	372	ASSEMBLY, Side Rail, Left Hand	1
7	P 134469	348	BLOCK, Support, Left Hand	1
8	P 136806	500	BLOCK, Support, Right Hand	1
9	P 136806	494	PAWL	1
10	P 93909	191	RACHET	1
11	P 129360	253	SHAFT	1
12	P 129360	249	BEARING, Sleeve	1
13	P 93908	590	TOP, Headrest	1
14	P 93909	196	HANDLE	1
15	P 93909	190	SHAFT	2
16	P 129360	230	BUMPER, Rubber	2
17	P 129360	228	SPRING, Compression	4
18	P 129360	229	STOP, Nylon	4
19	P 129360	255	WASHER, Spring	1
20	P 129360	258	BOLT, Shoulder, #8-32 x 1	4
21	P 129360	353	SPRING, Compression	1
22	P 27184	045	NUT, Hug Lock, 5/16	2
23	P 19679	091	LOCKWASHER, 5/16 x .062 Thick	2
24	P 83755	001	BOLT, Shoulder, 5/16-18 x 3/4	4
25	P 129360	350	SCREW, Flat Head Hex, #8-32 x 7/8	2
26	P 150055	001	SCREW, Truss Head, 1/4-20 x 7/8	4
27	P 150823	001	SCREW, Flat Head Hex, 1/4-20 x 5/8	4
28			Item # Not Used	
29	P 129357	090	INSERT, Top	2
30	P 10456	091	WASHER, Flat, 11/16 OD x .390 ID	A/R
31	P 129360	256	WASHER, Thrust	1
32	P 36565	061	PIN, Roll, 1/8 x 1	3
33	P 31276	061	SCREW, Set Hex, #10-32 x 1/2	1
34	P 42637	056	SCREW, Flat Head Socket, 5/16-18 x 1-1/2	2
35	P 93909	371	ASSEMBLY, Side Rail, Right Hand	1
36	P 129180	173	PIN, Roll	1
37	P 129359	894	TAPE, Adhesive	2
38	P 9645	061	SCREW, Drive, #4 x 3/16	6
39	P 83737	001	SCREW, Drive, #6	2
40	P 129360	551	HOOK, Fastener, 2 x 7-3/4	1

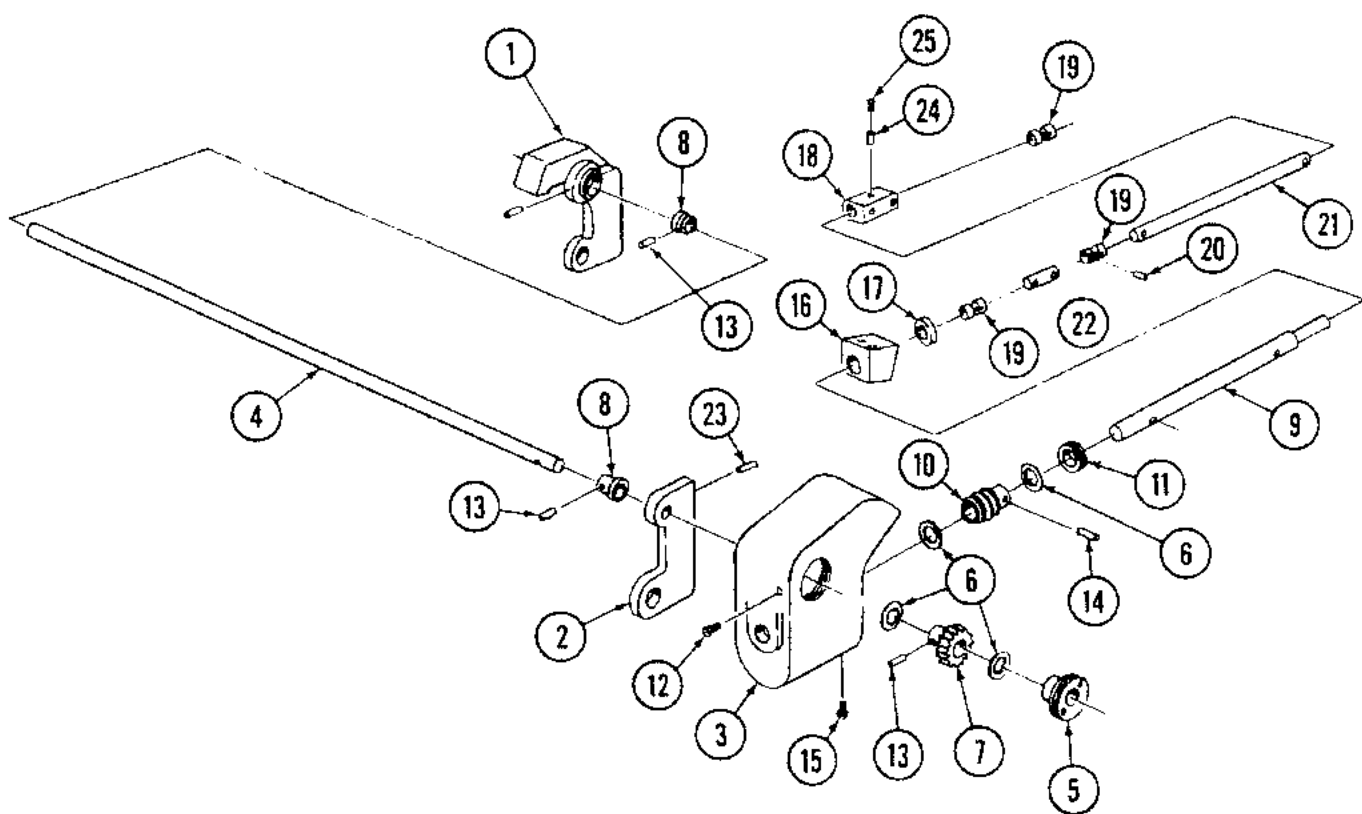


Figure 14-18. Kidney Bridge Shaft Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-18-	P	146653	926		KIDNEY BRIDGE SHAFT ASSEMBLY	X			
1	P	136806	486		STABILIZER, Right Hand	1			
2	P	136806	487		STABILIZER, Left Hand	1			
3	P	136806	460		BOX, Gear	1			
4	P	93908	584	*	SHAFT, Cross, 1/2 Dia. x 15-5/8	1			
5	P	16285	042		BEARING	1			
6	P	50713	091		BEARING, Thrust	4			
7	P	16247	091		GEAR, Worm	1			
8	P	15220	045		GEAR, Spur	2			
9	P	129359	684	*	SHAFT, Worm End	1			
10	P	16234	091		WORM	1			
11	P	16186	042		NUT, Adjusting	1			
12	P	90623	045		SCREW, Machine, Roundhead, #8-32 x 5/16	1			
13	P	24700	061		PIN, Grooved, 3/16 x 1	3			
14	P	30092	061		PIN, Grooved, 5/32 x 3/4	1			
15	P	3967	041		SCREW, Machine, Roundhead, #8-32 x 1/4	1			
16	P	93908	640		BLOCK, Kidney Bridge Linkage	1			
17	P	129359	702		BEARING, Spherical	1			
18	P	129359	718		BLOCK, Support	1			
19	P	20200	045		JOINT, Universal	3			
20	P	41511	061		PIN, Groove, 5/32 x 5/8	5			
21	P	129359	686	*	SHAFT, 3/8 Dia. x 6-1/4	1			
22	P	129359	720		SHAFT, 3/8 Dia. x 1-3/8	1			
23	P	45591	061		PIN, Roll, .103 Dia. x 1/2	2			
24	P	129360	230		BUMPER, Rubber	1			
25	P	4772	045		SCREW, Set, Hex Socket, 1/4-20 x 1/4	1			
26	P	93909	733		LABEL, Kidney Bridge Control (Domestic)	1			
	P	56401	598		LABEL, Kidney Bridge Control (French, Spanish, German 220V)	1			
<p>* Shafts may have undersized drill holes - to be drilled at assembly.</p>									

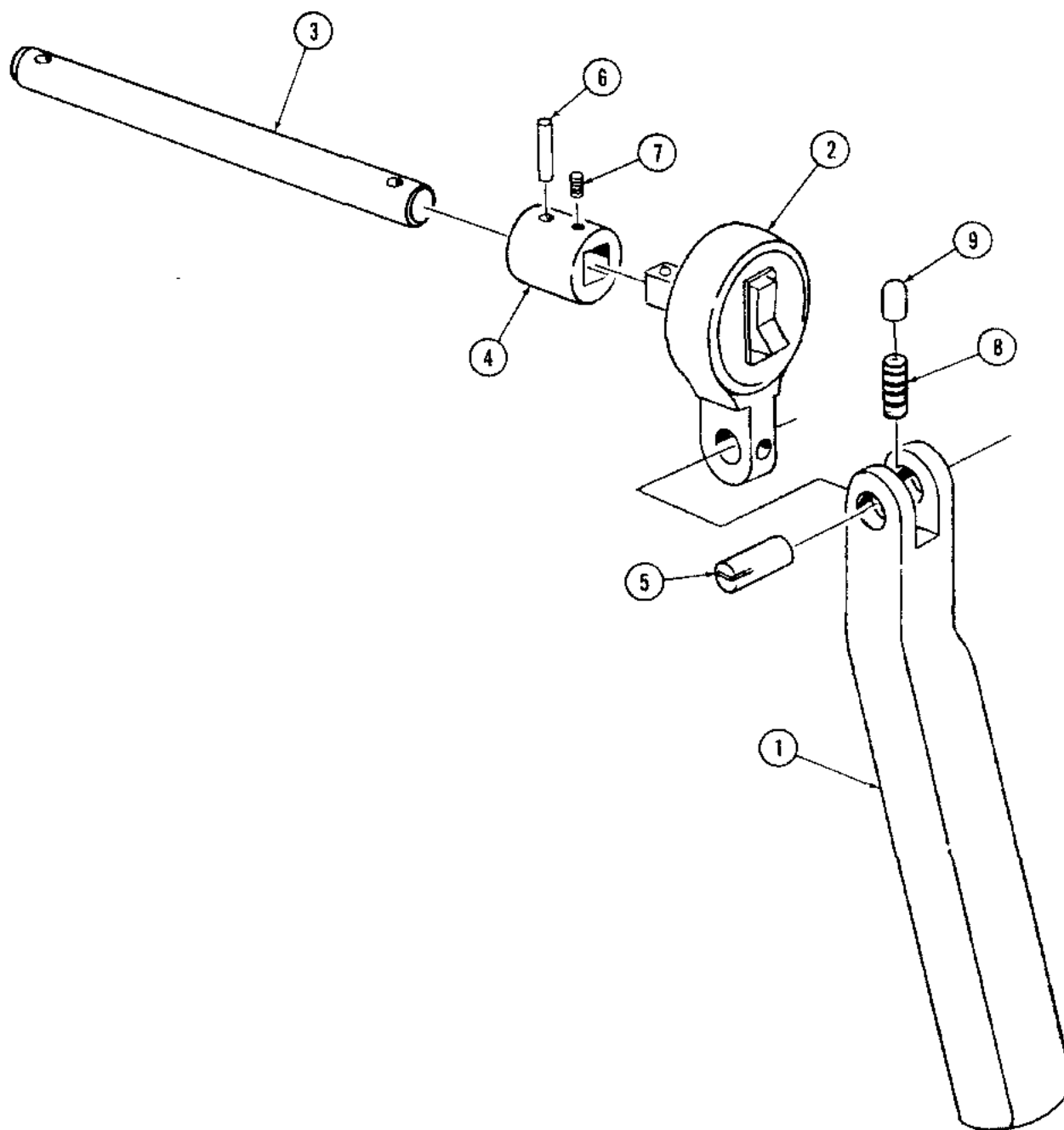


Figure 14-19. Kidney Bridge Handle Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-19-	P	93909	474		KIDNEY BRIDGE HANDLE ASSEMBLY	X			
1	P	136806	457		HANDLE, Kidney Bridge	1			
2	P	93908	662		RATCHET	1			
3	P	129359	685	*	SHAFT	1			
4	P	129359	681		SOCKET, Drive	1			
5	P	129360	266		PIN, Grooved	1			
6	P	41511	061		PIN, Grooved	1			
7	P	52004	061		SCREW, Set, #10-32 x 1/4	1			
8	P	129360	265		SPRING, Compression	1			
9	P	129360	264		PLUNGER	1			
* Shaft drill holes are undersize - to be drilled at assembly.									

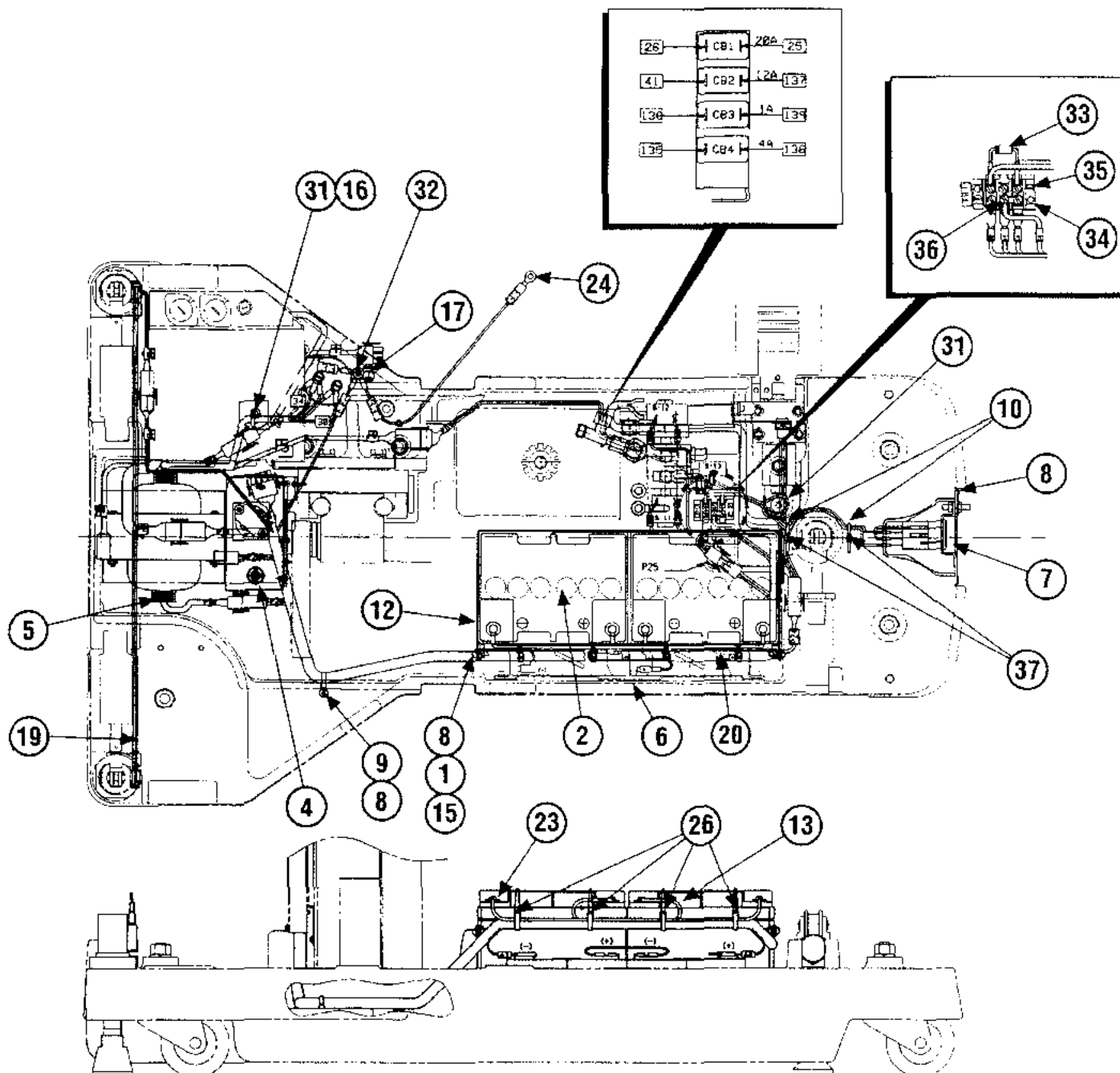


Figure 14-20A. Table Base and Column: Electrical Assembly (Part 1 of 2)

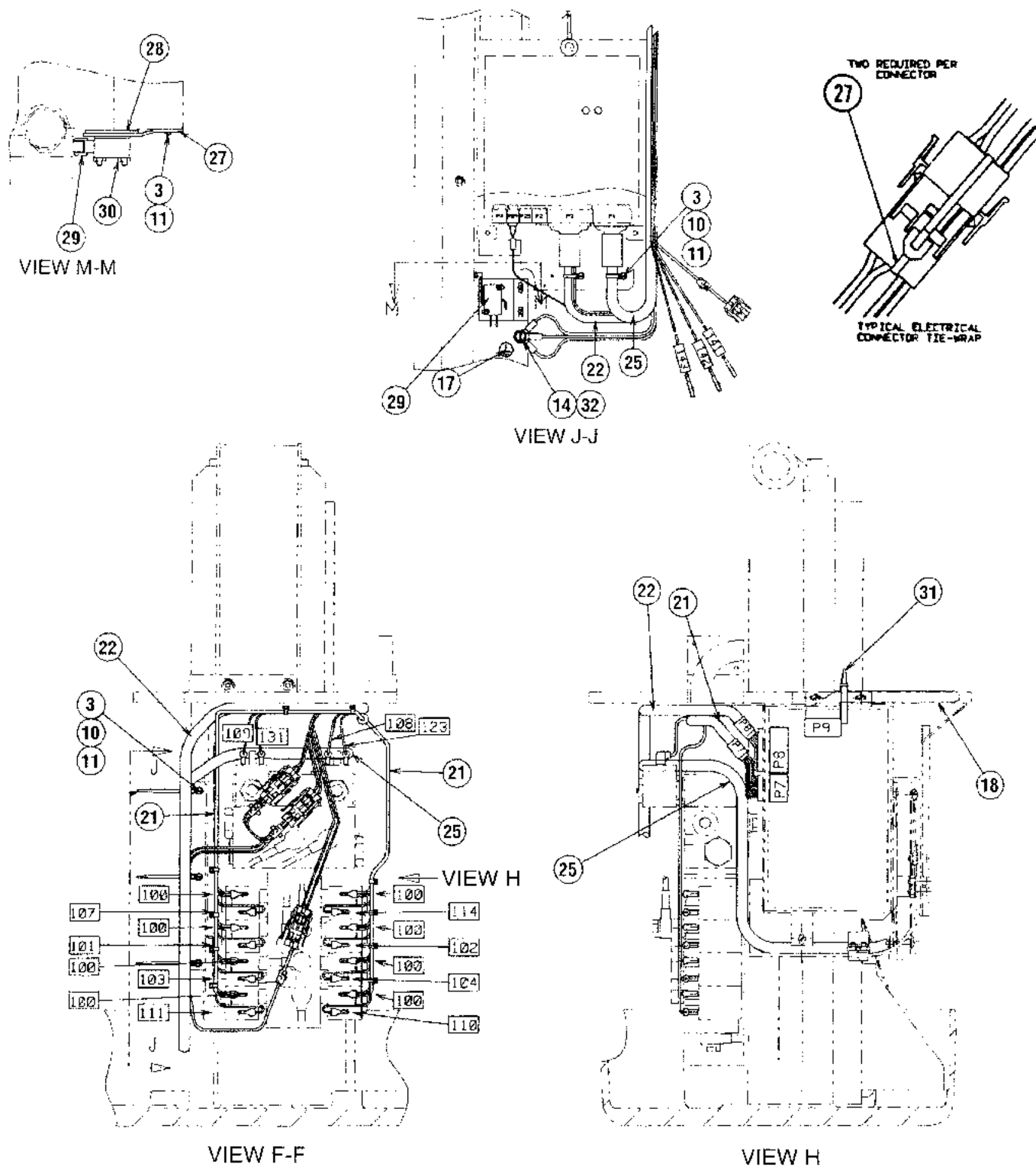
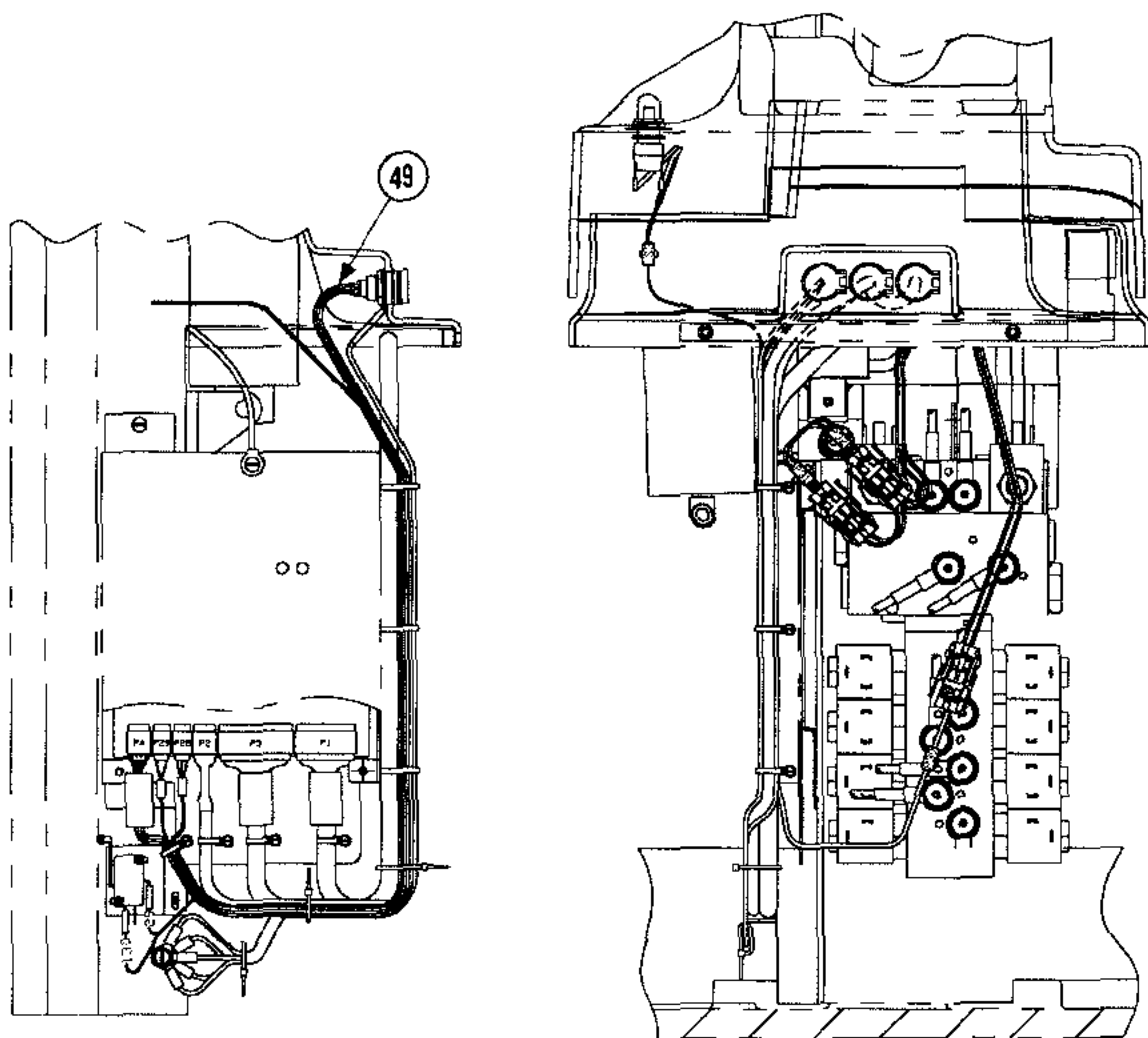


Figure 14-20B. Table Base and Column: Electrical Assembly (Part 2 of 2)



**Figure 14-20C. Table Base and Column: Electrical Assembly – HERMES-Ready
(Electric and Battery)**

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-20-					TABLE BASE AND COLUMN ELECTRICAL ASSEMBLY				
					3085 SP TABLE	X			
					3085 SP HERMES-READY TABLE		X		
1	P	3153	041		NUT, Hex, #8-32	2	2		
2	P	136806	806		BATTERY, 12 Volt	2	2		
3	P	30743	045		LOCKWASHER, #4, External Tooth	7	7		
4	P	146653	939		CHARGER, Battery	1	1		
5	P	136807	033		TRANSFORMER, 24 V Wiring Assembly	1	1		
6	P	93909	468		JUMPER, Battery	1	1		
7	P	134469	091		ASSEMBLY, AC Plate (Power Supply)	1	1		
8	P	93908	037		SCREW, Sems, #8-32 x 1/2" LG	9	9		
9	P	93909	461		WIRE TIE, #10	3	3		
10	P	93909	462		WIRE TIE, #4	9	9		
11	P	13334	045		SCREW, Rd. Hd., #4-40 x 3/8" LG	7	7		
12	P	93909	212		BRACKET, Battery Support	1	1		
13	P	93909	467		JUMPER, Motor-Battery	1	1		
14	P	82675	001		SCREW, Hex Hd., #10-32 x 3/8" LG	3	3		
15	P	84114	003		WASHER, Flat #8	6	6		
16	P	150476	930		MOUNTING BASE	1	1		
17	P	129360	483		STICKER, Natural Ground	3	3		
18	P	134469	178		ASSEMBLY, Cable, P9 to P10	1	1		
19	P	136807	035		ASSEMBLY, Wiring, Limit Switch (Floor Lock) (P27)	1	1		
20	P	141210	140		ASSEMBLY, Cable, Table Base	1	1		
21	P	141210	141		ASSEMBLY Cable, Solenoid (P7)	1	1		
22	P	141210	144		ASSEMBLY, Cable, P3 to P8	1	1		
23	P	136807	036		ASSEMBLY, Cable, P25 to Battery	1	1		
24	P	93909	525		STRAP Ground Assembly	1	1		
25	P	141210	142		ASSEMBLY, Cable, P1 to P5 & P22	1	1		
26	P	129360	598		TIE, Cable	4	4		
27	P	93909	548		PLATE, Offset Switch	1	1		
28	P	93909	549		SWITCH, Plate Stud Assembly	1	1		
29	P	93909	702		SWITCH, Roller Arm (Raise Limit Switch)	1	1		
30	P	10370	045		NUT, Hex Mach., #2-56	2	2		
31	P	431172	091		TIE, Cable	13	13		
32	P	124361	013		LOCKWASHER, External Tooth, #10	3	3		
33	P	93909	780		ASSEMBLY, Rectifier	1	1		
34	P	129359	140		TERMINAL BLOCK	1	1		
35	P	81681	002		SCREW, Rd. Hd., #6-32 x 1/2" LG	2	2		
36	P	84123	001		JUMPER, #6 Stud	1	1		
37	P	90712	041		SCREW, Round Hd., #4-40 x 5/8"	9	9		
38	P	134469	092		CABLE ASSEMBLY, Override Floor Lock (Not Shown) (P22)	1	1		
39	P	136806	819		CABLE ASSEMBLY, Hand Control (Not Shown) (P2)	1	-		
40	P	136807	027		CABLE ASSEMBLY, Foot Control (Not Shown) (P4)	1	1		
41	P	136807	080		ASSEMBLY, Limit Switch, P28 to Control Box (Not Shown)	1	1		
42	P	136807	726		ASSEMBLY, Mercury Switch - Seat (Not Shown) (P35)	1	1		
43	P	136807	727		ASSEMBLY, Mercury Switch - Back (Not Shown) (P34)	1	1		
44	P	136807	728		ASSEMBLY, Mercury Switch - Tilt (Not Shown) (P33)	1	1		
45	P	141210	137		CABLE ASSEMBLY, Leg Section (Not Shown) (P36)	1	1		
46	P	141210	138		CABLE ASSEMBLY, Back Section, P28 and P29 (Not Shown)	1	1		
47	P	129360	888		SWITCH, Back (Not Shown) (LS4)	1	1		
48	P	56401	561		CABLE ASSEMBLY, Charging Indicator (Not Shown) (French, Spanish, German 220V)	1	1		
49	P	134469	379		WIRE HARNESS ASSEMBLY, Hand Control (P2, P15, P99)	-	1		
50	P	134469	380		INTERFACE CABLE, 20 Ft (P99 to P97) (Not Shown)	-	1		

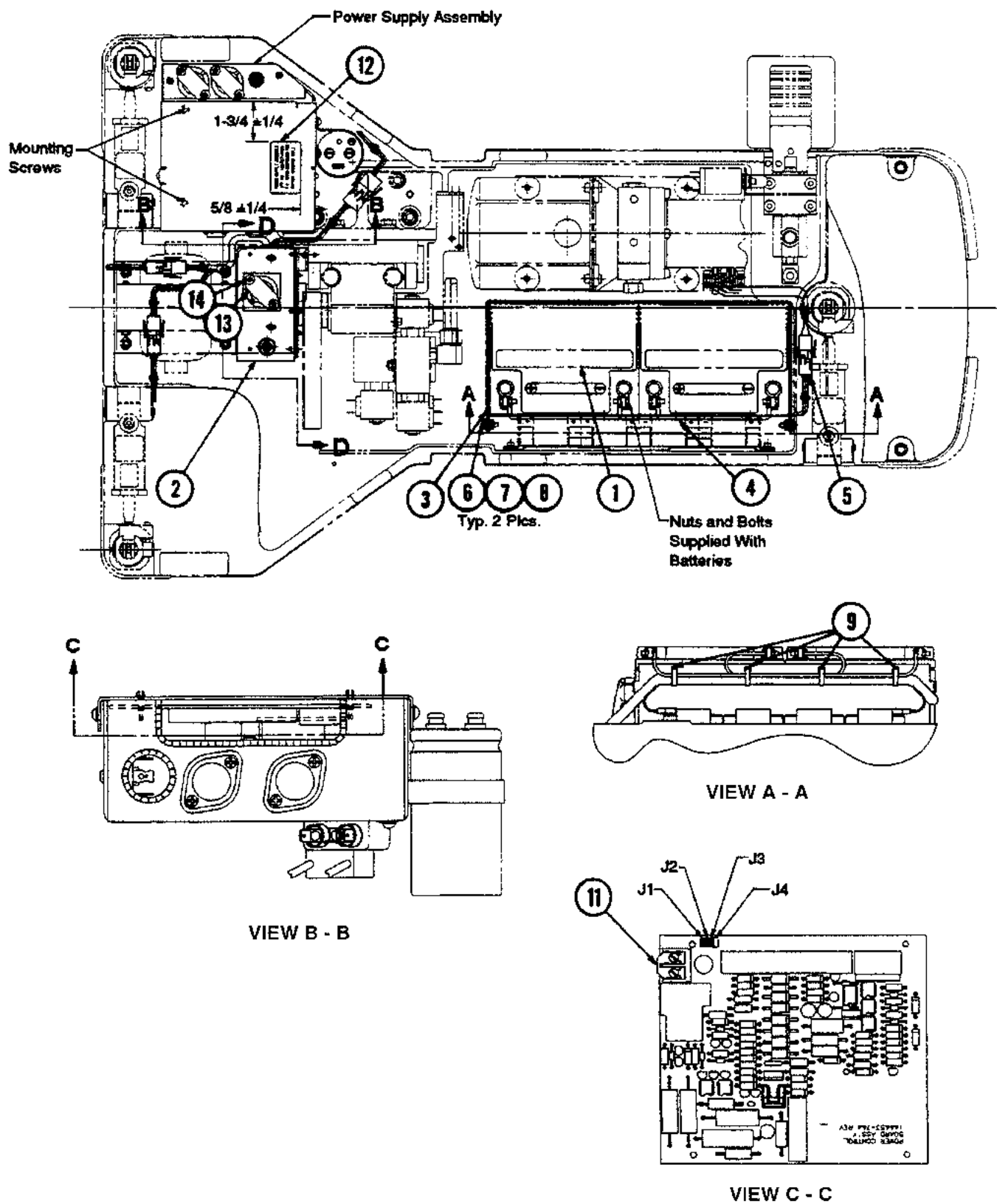
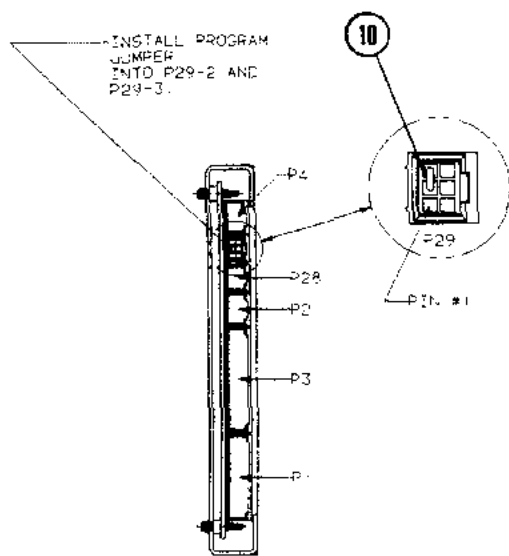
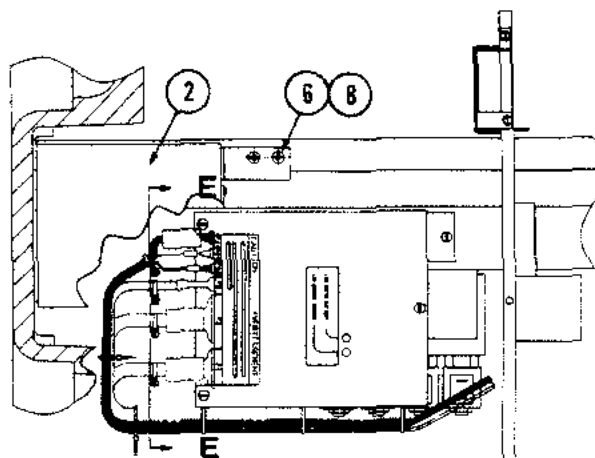


Figure 14-21. Electric-to-Battery Conversion



VIEW E - E



VIEW D - D

FIG. & INDEX NO.	PART NUMBER		SVC	DESCRIPTION	UNITS PER ASSEMBLY			
14-21-		630939	039	ELECTRIC-TO-BATTERY CONVERSION	X			
1	P	134469	361	BATTERY, 12 Volt	2			
2	P	146653	939	ASSEMBLY, Battery Charger	1			
3	P	93909	212	BRACKET, Battery Support (Coated)	1			
4	P	93909	467	WIRE, Jumper, Motor Battery	1			
5	P	134469	362	CABLE ASSEMBLY, P25 to Battery	1			
6	P	93908	037	SCREW, Sems, #8-32 x 1/2 Long	4			
7	P	3153	041	NUT, Hex, #8-32	2			
8	P	84114	003	WASHER, Flat, #8	6			
9	P	129360	598	CABLE TIE	4			
10	P	93909	748	WIRE, Jumper, Program	1			
11	P	129360	518	JUMPER	1			
12	P	93909	750	LABEL, Battery Identification (Not Shown)	1			
13	P	129360	653	COVER, Protective (Not Shown)	1			
14	P	129360	652	SCREW, Tamper Resistant (Not Shown)	2			

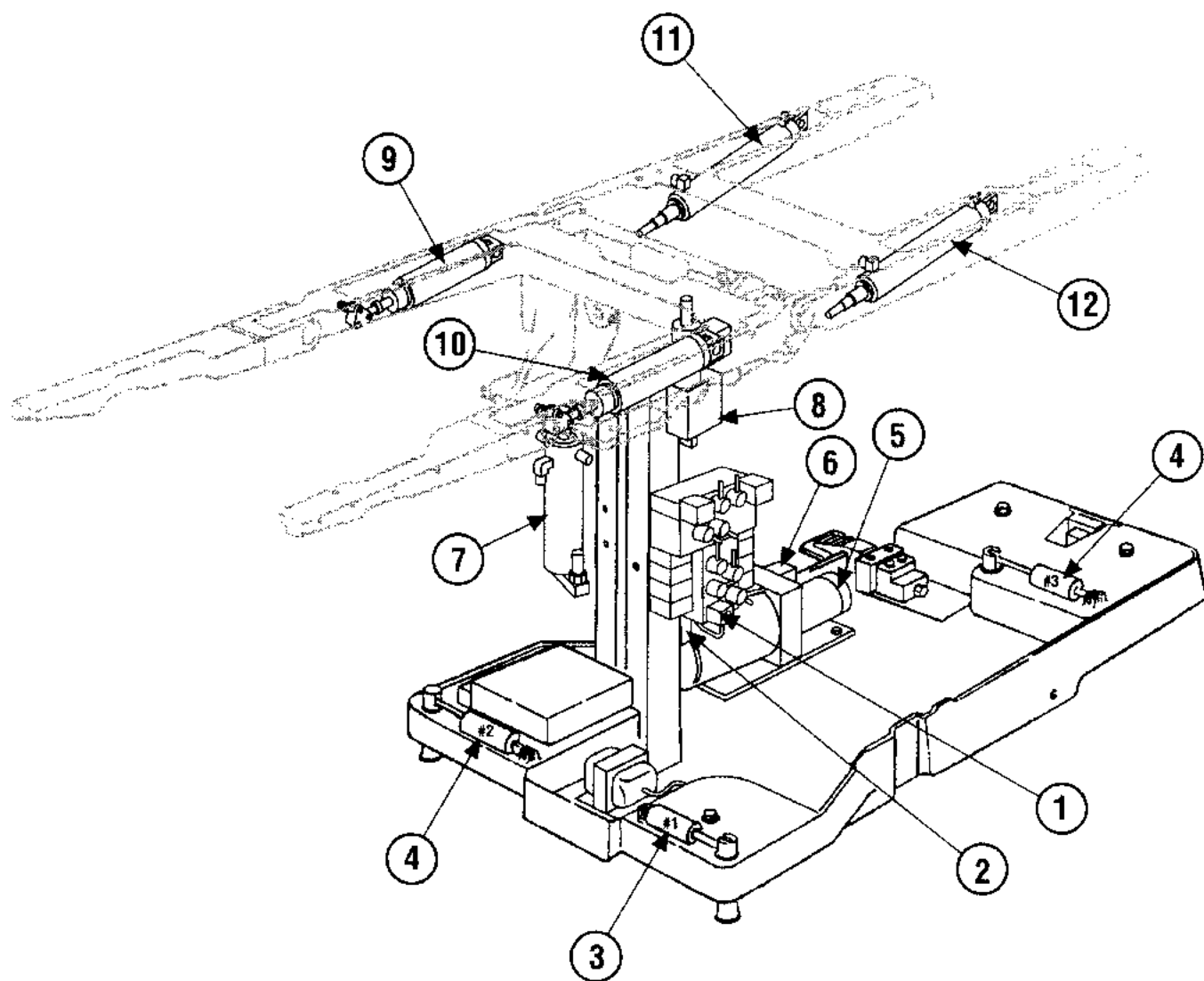


Figure 14-22. Hydraulic Components Layout

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-22-					HYDRAULIC COMPONENTS LAYOUT				
1	P	141210	304		ASSEMBLY, Control Block (see Figure 14-24)	1			
2	P	134469	149		ASSEMBLY, Column Flange	1			
3	P	56397	274		CYLINDER, Hydraulic, #1, Floor Lock	1			
4	P	56397	275		CYLINDER, Hydraulic, #2 and #3, Floor Lock	2			
5	P	141210	305		MOTOR and PUMP ASSEMBLY (see Figure 14-23)	1			
6					VALVE BOX IV (see Figure 14-26)	1			
7	P	134469	133		CYLINDER, Seat	1			
8	P	141210	108		CYLINDER, Tilt	1			
9	P	141210	146		CYLINDER, Leg Section, Right Hand	1			
10	P	141210	145		CYLINDER, Leg Section, Left Hand	1			
11	P	134469	132		CYLINDER, Back Section, Right Hand	1			
12	P	134469	131		CYLINDER, Back Section, Left Hand	1			

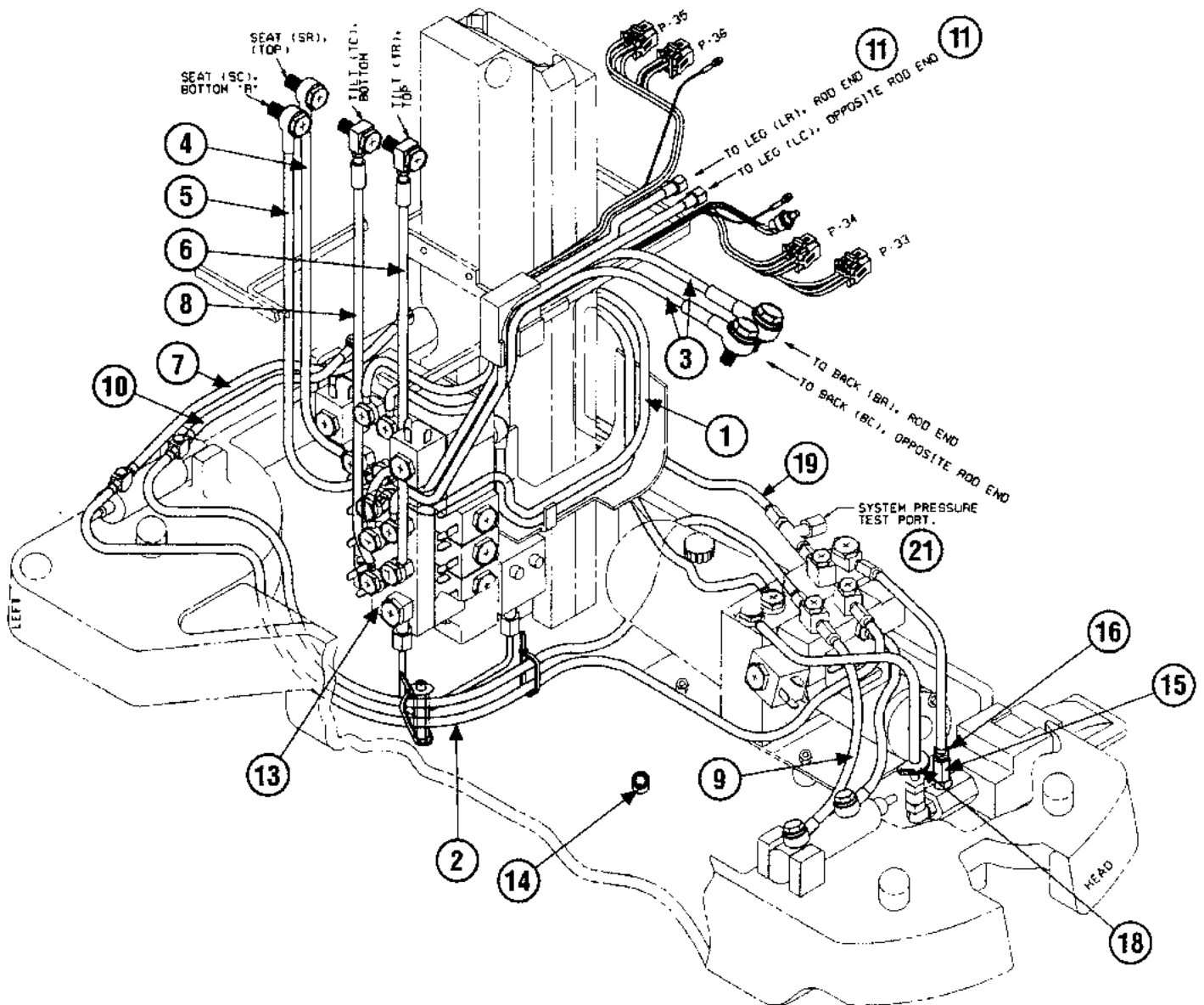


Figure 14-23. Table Base and Column: Hydraulic Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-23-					TABLE BASE & COLUMN HYDRAULIC ASSEMBLY	X			
1	P	150823	398		HOSE, #4, 1600 mm (Pressure Port)	1			
2	P	150823	384		HOSE, #2, 1000 mm	1			
3	P	150823	607		HOSE, #2, 850 mm	4			
4	P	150823	603		HOSE, #2, 650 mm (SR Port)	1			
5	P	150823	620		HOSE, #2, 500 mm (SC Port)	2			
6	P	150823	617		HOSE, #4, 330 mm (TR Port)	1			
7	P	150823	601		HOSE, #2, 380 mm	1			
8	P	150823	618		HOSE, #4, 307 mm (TC Port)	1			
9	P	150823	602		HOSE, #2, 300 mm	1			
10	P	150823	393		HOSE, #2, 250 mm	3			
11					Item # Not Used				
12					Item # Not Used				
13	P	141210	304		ASSEMBLY, Valve, Column Mounted (see Figure 14-24)	1			
14	P	4433	041		SCREW, Set, 1/4-20 x 5/16" Lg	1			
15	P	56397	377		COUPLING	1			
16	P	150823	426		CONNECTOR, Male	1			
17	R				TUBING, Superthane, 7/16"x1/4" ID x 10-3/4" Lg (Not Shown)	A/R			
18	P	129360	600		CLAMP, Hose	2			
19	P	150823	399		HOSE, 4, 1600 mm (Return Port)	1			
20	P	150823	388		HOSE, #2, 850 mm (LR, LC)	2			
21	P	764329	602		TEE, Swivel, 1/4 x 1/4 x 12 M (Test Port)	1			

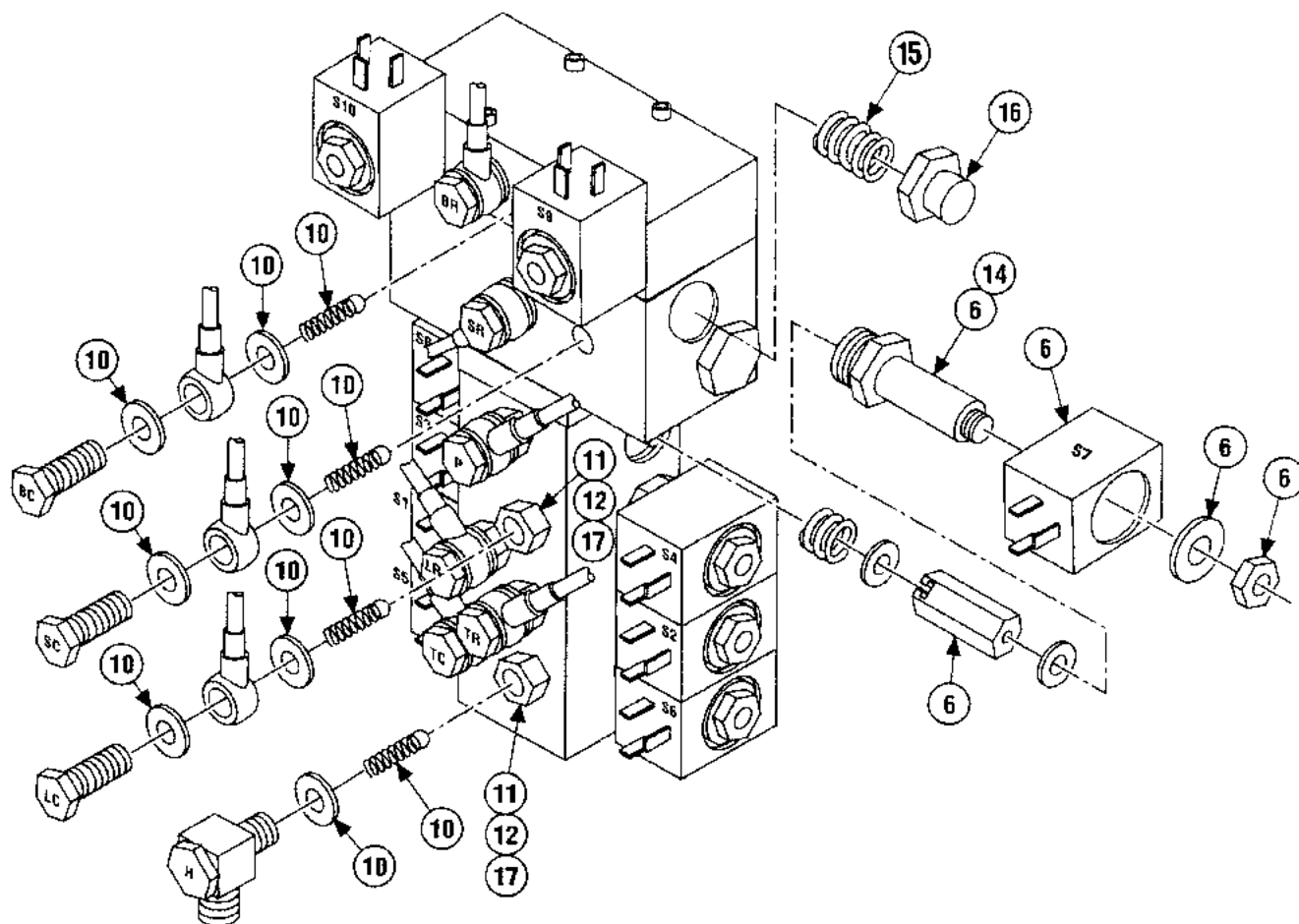


Figure 14-24. Control Block Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-24-	P	141210	304		CONTROL BLOCK ASSEMBLY	X			
1					Item # Not Used				
2					Item # Not Used				
3					Item # Not Used				
4					Item # Not Used				
5					Item # Not Used				
6	P	764330	172		KIT, Solenoid Assembly, S1 through S10	10			
7					Item # Not Used				
8					Item # Not Used				
9					Item # Not Used				
10	P	150823	727		KIT, Check Valve	1			
					• Spring and Ball (Check Valve)				
					• USIT Ring (Sealing Washer)				
					• CARTRIDGE, Check Valve (Qty 4)				
11	P	56397	585	*	CARTRIDGE, Check Valve	2			
12	P	56397	469	*	O-RING	5			
13					Item # Not Used				
14	P	56397	457		O-RING	10			
15	P	150830	150		SPRING, Pressure (S9, S10)	2			
16	P	150823	692		SPRING GUIDE	2			
17	P	150823	377		SPRING (Not Included in Item #6) (Used on All C "Port")	4			
* Items included in P-150823-727, Item #10.									

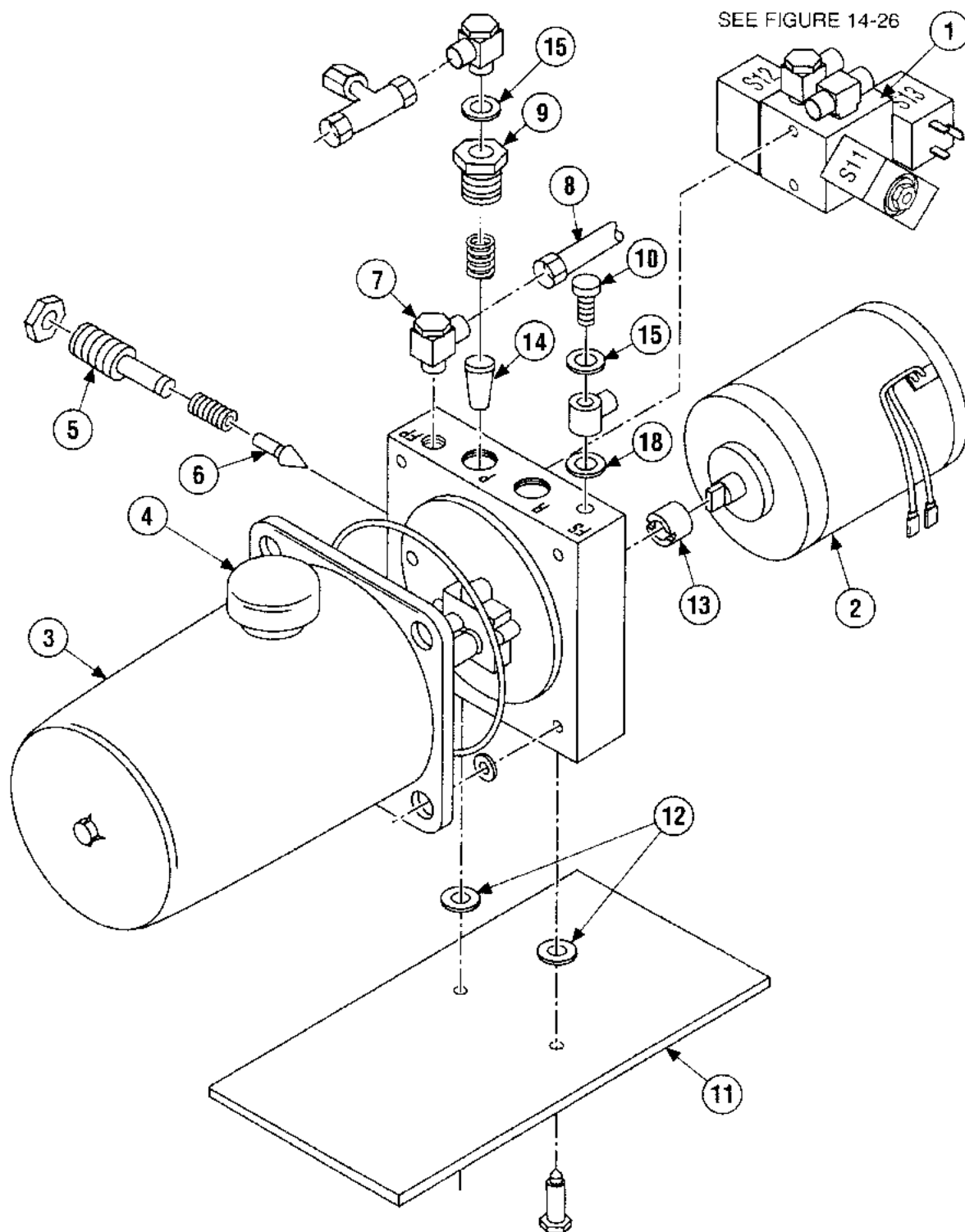


Figure 14-25. Motor and Pump Assembly

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-25	P	141210	305		MOTOR AND PUMP ASSEMBLY	X			
1	P				VALVE BOX IV (see Figure 14-26)	1			
2	P	134469	299		MOTOR	1			
3	P	150823	864		RESERVOIR KIT	1			
					• O-RING SEAL, Reservoir				
					• NUT				
					• SCREW, Slotted Hex				
					• RESERVOIR				
					• WASHER				
					• CAP, Breather				
					• (2) 1/2 Gal. Oil				
					• LOCTITE Sealant				
4	P	150823	702		CAP, Breather w/Dip Stick	1			
5	P	150823	358		SCREW, Plug	1			
6	P	150823	365		CONE	1			
7	P	150823	567		FITTING, w/Filter	1			
8	P	150823	387		HOSE, 250 mm	1			
9	P	150823	371		NIPPLE, Threaded	1			
10	P	150823	369		SCREW	1			
11	P	56397	256		PLATE	1			
12	P	150823	873		WASHER	2			
13	P	150823	366		COUPLING	1			
14	P	150823	631		FILTER	1			
15	P	56397	441		USIT RING	2			
16	P	93909	780	*	ASSEMBLY RECTIFIER (Not Shown - see Figure 14-20, #33)	1			
* Not included with Motor and Pump Assembly - must be ordered separately.									

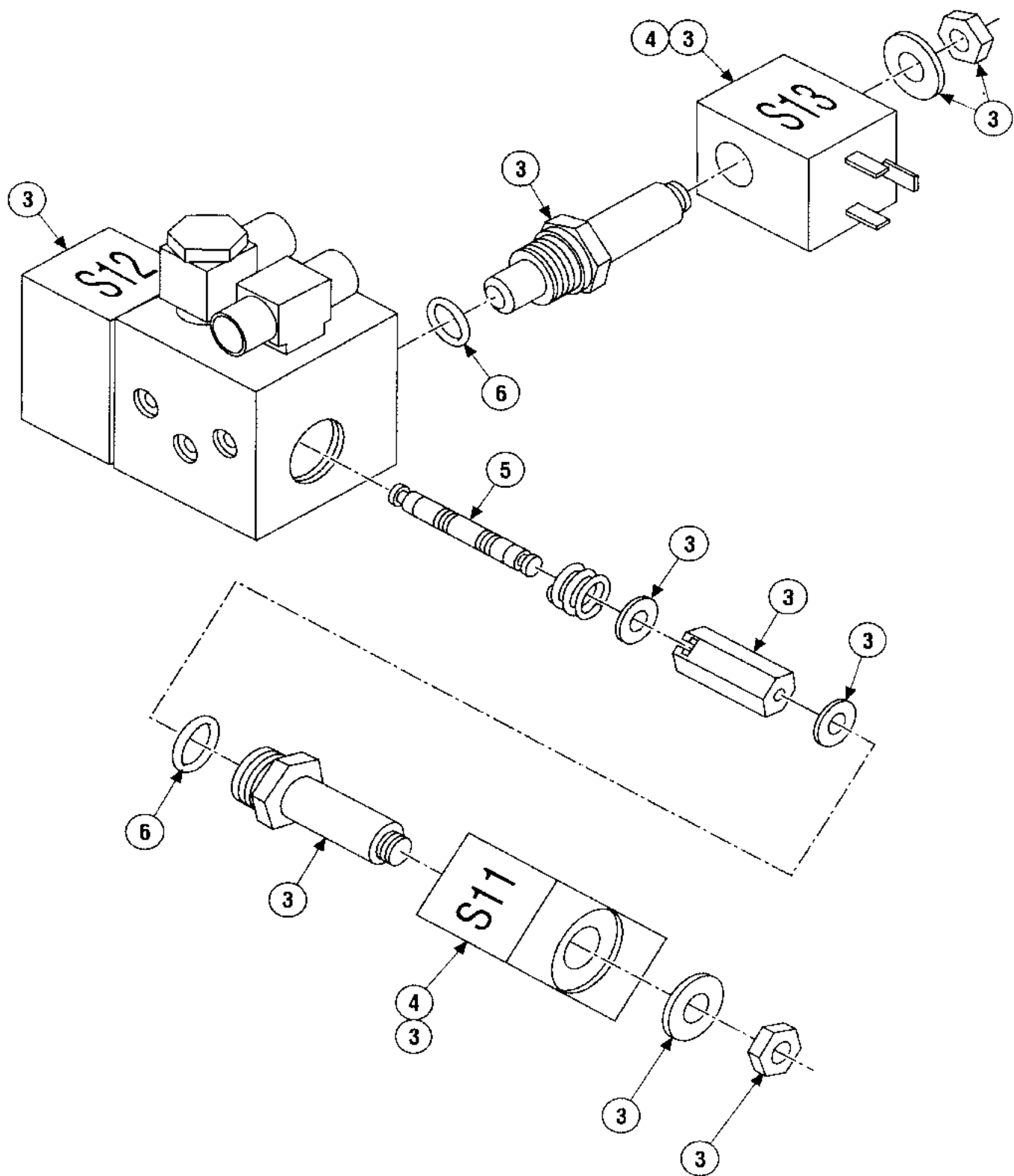


Figure 14-26. Valve Box IV

FIG. & ITEM NO.	PART NUMBER			S V C	DESCRIPTION	UNITS PER ASSEMBLY			
14-26-					VALVE BOX IV	X			
1					Item # Not Used				
2					Item # Not Used				
3	P	150823	380	*	VALVE, Solenoid (S1 through S13)	2			
4	P	150823	661		COIL, Solenoid (S1 through S13)	2			
5				**	HYDRAULIC SLIDE	1			
6	P	56397	457		O-RING	2			
	P	56397	486		O-RING (Not Shown)	1			
<p>* Includes Coil (Item #4), but Coil can be ordered separately.</p> <p>** This is NOT a field-replaceable item. If this part fails, the Motor and Pump Assembly must be replaced (see Figure 14-25).</p>									